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ORIGINAL ARTICLES.

POST-OPERATIVE SEQUELÆ OF PELVIC AND ABDOMINAL SURGERY.*

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The occasion and the peculiar auspices under which I appear here can scarcely fail to be to me somewhat embarrassing. I cannot avoid a feeling of inadequacy for a work which on account of its momentous importance should be well done. It may be claimed that all has been said; then what I say, I only throw in as confirmation of that which is accepted as complete. That all has been said and the best done is a shallow assumption. We are just beginning to talk and that but stammeringly—and as yet much of our surgery is bungling and blundering. We do not esteem the facts we have as all there are. We prize our advances the more for their promise of something better, we find in them prophecy of yet more splendid development and yet greater discoveries in our science; of more originality and greater simplicity of method. Our country has given us great names to place beside those on the other side of the ocean. Yet we need to greatly multiply the reasons for our boasting.

Personally we hope to avoid pretension, to give out only those lessons our experiences have taught us. My deductions will not be theoretical, but these drawn from actual experience. The importance of adopting simple and direct methods, those tried, tested and practiced by a number of successful operators, should influence all beginners in the choice of methods. The fact that A and B have

been the most successful operators, that their mortality has been low, that they complete their work at any cost, that serious post-operative complications have been of rare occurrence are facts worthy of serious consideration by the practically inexperienced. We have a valuable surgical literature recording for us the methods which have withstood successfully many tests in the experience of our best surgeons. By careful study of this literature, which is at easy command, there can be gleaned many lessons that will serve a good purpose in puzzling and trying cases, such as come to every surgeon no matter what his skill.

Though we have been rapidly simplifying our somewhat ambiguous surgical nomenclature there is still much confusion, lack of definiteness of application in many of our terms. In discussing post-operative sequelæ and some of the causes leading to the same, we will not concern ourselves as to terms used to designate pelvic and abdominal conditions, those having for us no very special clinical value. The endeavor will be to use such terms as will make our meaning clear. We hope we have a better understanding—a clearer conception of our subject—than we have of any dead language, the Latin or the Greek, that you will not need an English, Latin or Greek glossary to get at our meaning and that our facts are such as can be made plain even through limited and imperfect English. In our work the sequelæ of what we do is the one

* Lecture delivered at the Post Graduate Medical School of Chicago.

supreme concern. Notwithstanding the sequel of many procedures have been a fruitful source of skepticism with many, the gynecologist and obstetrician have gone on and through improved skill and technique have brushed away many old objections and obstructions; they have grown in the consciousness of their ability to deal successfully with cases which in a near past were allowed to suffer on without relief. We have arrived at the point of knowing that many women suffer from diseases that cannot be cured or even relieved of their severer symptoms by purely medical treatment; that we frequently meet with pathological conditions that medicine, massage, or electricity will not relieve; that grow from bad to worse and that only surgery can reach; that for many cases there are only two avenues of relief, skillful surgery or death.

Here I would mention that a great number of deaths are of patients where there has not been even a suggestion that surgical interference would save life. In many instances death comes before the physician even recognizes the character or gravity of the trouble; before a correct diagnosis is made, and again to that group classed by operators as hopeless when first seen, who are permitted to suffer on and die without an attempt being made or offered for rational surgical relief. Again a third group, a most distressing class to the surgeon, who is willing to give the one chance, those who die on the table, or soon after the operation—never reacting. There is current among the more or less intelligent laity and the more or less, usually the latter, intelligent non-specialist and general practitioners, that the results in abdominal and pelvic surgery are either eminently successful or else woefully responsible for a train of after results in the unfortunately surviving patient, that render it scarcely a permissible branch of surgery unless the former results can be absolutely promised. Just why this should be is a little difficult of explanation unless the early history of this special line of work is considered, together with the methods of certain operators, with whom promises were a part of the means by which operation in many cases was obtained. In no other division of either medicine or surgery, is it demanded of the physician that his results be absolutely certain and that he guarantee after immunity from all trouble allied to that

which he undertakes to remove. Unfortunately there are some at present, possibly not so many as formerly, who in order to obtain chance for operation, were ready to promise everything, just as the ready witted politician has offices waiting for every one whose franchise shall be cast for him. Mrs. X, shall have no more pain, while Mrs. Z, shall be absolutely relieved of every appearance of her monthly disturbance, while Mrs. Q, shall never again suffer constipation or tenesmus, and so on throughout the whole catalogue of diseases, for which operation is ever done or suggested. Now this was all unfair both to patient and operator. Operation is done to definitely remove certain diseased conditions, and to remedy aberrant physiological conditions incident thereto. Any more than this cannot be promised. No more than is promised in the treatment of every other disease. The physician called on to treat a case of typhoid, does not insure his patient in the event of his recovery total immunity from all the sequelæ incident there to. Neither does he on taking charge of the case give absolute assurance of the recovery itself. Neither should the surgeon be required to do so except within the limits of his own experience in the conditions for which he is about to operate. No surgeon should promise recovery to his patients on the grounds of the results of others, unless his own experience is absolutely parallel with theirs. The beginner in abdominal and pelvic surgery, unless after a long and careful preliminary training, and unless accompanied in his work by a careful and experienced operator, must usually have less perfect results than the surgeon of a wide and intelligent experience. I say intelligent experience, because there are operators and operators, and some with a wide and varied experience must never be looked to surpass the line of mediocrity. An operator who in the midst of a serious case, looks about him, and addresses the spectators, "Now gentlemen if you have any suggestions to make, I am ready to receive them" is hardly the man any one of you would select to operate upon wife or mother.

A general must be quickwitted, ready to modify the details of his movements to meet strategy of the enemy, but he must needs use his own wits, and not delay to send home for advice. Now all this you

may say is foreign to the subject at hand, but I beg to submit, that, post-operative complications and sequelæ, have to do with all the factors casually suggested in these prefatory remarks. For your more intelligent appreciation of the same I shall divide them, group them, if you please, as I have most frequently met them, into three classes:

First: Post-operative sequelæ due to complications induced by delay in operating.

Second: Complications induced by faulty work and methods.

Third: Sequelæ, which may be said to follow naturally any serious surgical procedure of the nature under consideration.

Incidentally, as following along the line of thought here suggested, will be considered the ways and means best adapted in the light of surgical experience to avoid the avoidable in the way of unsatisfactory results in this branch of surgery.

Delay in operating is at once the bane and danger of all pelvic and abdominal surgery; baneful to the surgeon, dangerous to the patient. This is true in all the various conditions met in the pelvis and abdomen, but especially true in two diverse conditions, pus in the pelvis and in tumors of the uterus. I have long earnestly advocated the prompt removal of all puriform degenerations in the pelvis, and the longer and farther my experience grows, I find I have no reason to change. The logic that hesitates at an early amputation in order to save an inch or an ell of a leg, while thereby life may be risked, is only half-way foolish as compared with the procrastination that dawdles with puriform disease involving the integrity of the vital abdominal viscera. Pus within the pelvis is at once a present and a far reaching menace to the safety of the patient. Its extension is not limited geographically nor anatomically nor functionally. Pus that starts in the tube may burrow through the diaphragm, or show itself in a pulmonary abscess, while, an appendicitis may rush through like a Johnstown flood and assail the very vitals of the economy. Now while the results of retained and imprisoned pus may be thus fulminant in their nature, they may also be insidious, slowly attacking the vitality of the

sufferer, bringing on a train of evils, which like gossip growing with a thousand tongues, gains by going and is dangerous apace. Pus if it is not absorbed is irritating and excites inflammation, and inflammation brings about adhesions among the organs surrounding the pus focus. So it is that an inflammation starting in one organ often necessitates surgical interference with another entirely distinct from it physiologically and distinct from it anatomically. Bowel adhesions are most common in delayed tubal operations, and where the puriform degeneration has gone beyond a certain time the bowel instead of being adherent is often really gangrenous, and its treatment brings into the field the most delicate and painstaking intestinal surgery. Now in these cases we must look upon the intestinal surgery both in the light of operative complication and of being indirectly the cause of post-operative complications and sequelæ. Its presence as a complication of the original operation for the removal of the pus tube is incident to delay in the original operation, and is a necessity on account of this delay. Without it the operation as at present necessitated, would be a failure or a very bleak success. But if on account of this necessary bowel surgery there is after trouble brought on by stenosis and diminished calibre of the gut, is the surgeon or abdominal surgery responsible for such result however unfortunate it may be? Can such sequelæ be for an instant considered argument against either the results or legitimacy of abdominal work, or against the perfection of its methods, apart from preceding calamitous neglect? I think the good judgment of all must decide that in such cases surgery has not had its chance. And so, if after a case has been neglected until a general peritonitis supervenes after a long period of pus-infection, and consequent loss of vitality in all structure, so that, as often happens, the stitches in the abdominal wall will scarcely hold and there is a consequent necessity for the whole incision to heal by granulation, can it be charged to surgery that its methods have been faulty or inefficient? Certainly not. Whatever after complications arise, adhesions, hernia, fistulæ or else of this uncanny clan, must be laid directly at the door of the bad logic and poor wisdom of those to whom the delay is attributable.

The same reasoning, and possibly with even a greater scope in the possibility of the complications, will apply to neglected cases of uterine tumor. These are apt, as you all know, to be tampered with by every agency under the sun. Each and every dilly-dallier is busy seeking methods and modifications and refinements of dilettante-quixotism in order the more to steer shy of the true surgical treatment of which they have a mere smattering of information and this theoretical—not practical. While these empirical devices are being put into practice the disease travels on apace, the tumor increases and trespasses upon other important organs, interferes with their integrity by pressure, contracts adhesions with bladder, intestines and omentum, and, so the disease steadily progresses, the tumor increasing in size and irregularity, which with the increased density and thickness of the adhesions makes its removal a daily increasing difficulty. This is the more likely to be true if tampered with by electricity, with or without puncture—all the more if puncture is used at all.

It will be understood at a glance that the reasoning that applies to the two distinct affections here alluded to, must surgically apply to all diseases of the pelvis and abdomen. This is probably true of appendicitis, than which there is not a more neglected disease, nor one in which so much is "trusted to nature." Delay here is the very essence of danger, and often puts us once and for all outside the possible chance of relieving a patient. It is unnecessary for me to further insist upon this fact here. Both your instructors and your instruction are *en courrant* with all that is best on the subject. Under this head it is only necessary to again insist that whatever is logic in one set of abdominal diseases, from a surgical standpoint, is logic in all, and that early surgery soundly applied, is the *open sesame* to all success in their treatment.

The second series of complications I have classed as those due to faulty work or methods. Under this head I have most frequently found adhesions about the incision or indeed throughout the abdomen and pelvis, due to the presence of irrigating fluids. It used to be thought that chemicals were the highway to cleanliness, that an otherwise dirty surgeon could be clean if he had a basinfull of bichloride solution at his

side—a sort of dirt "Taboo," so to speak. This had its effect in the complications under notice, and the banishment of this harmful superfluity has worked good in many ways, first by taking away a frequent cause for re-operation, and second, in teaching operators that cleanliness is an essential, inherent trait of the man and cannot be grafted on him by chemicals.

While considering adhesions, it may be well to refer to their imperfect handling as a very pregnant cause of unsatisfactory results in pelvic surgery. When they exist they are not to be attacked wildly and rudely, but are to be broken up carefully, and each step guarded by careful inspection. If by chance the gut is torn through, it is at once to be mended, all else being for the time suspended unless it is the stoppage of hemorrhage. Tears in the omentum are to be dealt with after the same manner, otherwise pitfalls are left for the unwary intestine, whereby to strangulate itself. All peritoneal destruction is to be avoided, and any portion of surface operated upon that can be covered with peritoneum is a direct safeguard against adhesion; this is especially true of large fleshy pedicles. In the removal of diseased organs it is necessary carefully to break up not only the adhesions existing between the parts removed and those remaining, but also those between all remaining parts otherwise healthy. Failure to do this is a fertile cause of bowel obstruction, resulting fatally in cases that would otherwise recover.

Coming next in order as a fertile source of mischief is the faulty handling of hemorrhage. At the bottom of much hemorrhage is the reprehensible use of cat-gut. The use of this agent ought to be avoided; except for the very smallest vessels it is not so safe as silk, and the latter has too much to recommend it, too many successes on its side to be theoretically argued out of sight. The careful tying of every bleeding vessel as it is met, and of pedicles in portions small enough to secure perfect stricture, with sufficient button, to prevent slipping, will give security against hemorrhage as it most frequently occurs. Just here I will mention a method or rather a procedure by which all surgery, especially that of hemorrhage, is presumably made easy. I refer to the Trendelenburg position. This was

originally invented for the performance of suprapubic cystotomy. Those of you who have seen this operation know just how much need there is here of the Trendelenburg position, and in my opinion there is but little more use for it anywhere else. In all operations in which hemorrhage is likely to occur by oozing and indirect leakage it is a positive disadvantage. The patient is stood nearly on her head, and the natural gravity of the blood reversed. Now this together with a weakened circulation and the presence of surgical shock, will give apparently a dry field of operation, but when the natural recumbent position is assumed it will at once become prone to oozing and leakage which may soon become a serious matter. All oozing must be controlled and any step which veils or conceals its presence is a menace to the safety of the patient.

In this connection we may profitably consider improper drainage as a cause of serious complication after operation.

Drainage is well recognized as a surgical necessity in operations of all kinds. Under certain conditions its employment is not disputed or questioned, except in the abdominal cavity. Why this is so is not always easy to explain. In fact it is probably best not to attempt to explain every vagary that comet-like flits across the unsettled minds of many following the plough in the furrow of abdominal surgery. It is enough to carefully listen to the arguments on each side, weigh them well, see wherein is contained the least fancy and the most fact and follow the lines of presumptive safety. Much of the dissatisfaction over drainage is the result of crude methods and faulty care of the tube, and indeed of the patient. Most of those now condemning drainage have vacillated between one method and another and finally, without having gotten satisfaction out of any method, they condemn all. Gauze, lampwick, bone tubes, new devices to keep the tube clean, all have failed, and like King Solomon after he had gone the rounds, they cry, "Vanity of vanities, all is vanity." The proper way to apply any method is to study the end to be attained, and then use means to accomplish this end. To remove accidental debris, irritating or accumulating fluids there is nothing that so well answers as the small glass drainage tube reinforced with the long-nozzled syringe. All other

device is unnecessary. Gauze is a good primary but a poor secondary drain. It will not discharge lymph, nor will it insure the non-disturbance of the parts on its removal as is afforded by the simple glass tube. It likewise promotes adhesions, and these are the factors necessitating much after-surgery in the abdomen. All foreign matter introduced at the time of operation must come under the head of irritants and this is true of the drainage tube; the more so the longer it remains unless it is absolutely clean, and kept clean or in fact unable to get dirty. The improper handling of the drainage tube, its shifting or its rude handling may make it, in careless or unskillful hands, a source of danger and discomfort to the patient. This is, however, no argument against its proper use, and the operator who gets bowel fistulae from it simply confesses that he has placed it improperly, while he who lays ventral hernia to it as a prime factor forgets that hernia rarely appear in the lower angle of the wound where the tubes should always be placed.

Under the head of foreign bodies as a cause of mischief it is necessary to class big and unnecessary ligatures. Many small vessels can be secured by torsion whereby tying is rendered unnecessary. When this can be safely done it is by far preferable to the use of multitudes of ligatures. Big, heavy, braided silk is apt to cause trouble by non-absorption and by making a focus for suppuration. Hence it is the rule to avoid ligatures heavy past the absolute necessity of each individual case, and to apply as few as possible.

Big ligatures probably are oftener the cause of abdominal fistulae than any other factor, unless it be in those of a fecal nature. These latter are caused by failure to mend weakened spots in the gut, or by badly placed drainage tubes.

I have neglected to consider one point in reference to drainage and to do this I shall go back for a little. I mean the consideration of the after condition of the patient. She is always quiet except in the rarest cases; her recovery is non-febrile, her tongue is clean, her secretions normal. I am speaking of course of cases in which there have been pus and adhesions. In simple cases this condition of affairs ought always to obtain. This is in

marked contrast with cases in which, under similar conditions of operation drainage is not used. The contrast is as marked as that laid down in the books between concussion and compression of the brain. The quibblers cry your operation has not been clean or you would not need drainage; and again, before this alarm has died away, another investigating army explain away the use of the tube because it infects the stump and carries millions of microbes into the abdomen. Here is at once a confession and a plea. First, they do not know when or how to use the tube, and second, they explain it away on the ground of its causing what on the first hand they confess is a necessity for its employment. Such argument needs but little attention.

Passing on I shall class as imperfect surgery all that leaves behind removable diseased organs or conditions. Under this head must be placed vaginal puncture for pus in the tubes, and the vaginal removal of diseased organs. Both of these operations are unjustifiable: first, because they are incomplete, and second, because they do not allow the operator to manipulate freely enough to entirely relieve the patient either of her danger or discomfort. Pus tubes are not a simple condition, but are complicated with adhesions and, therefore, in order to deal with these all the vantage ground of operative position must be sought. This is impossible in the vaginal operation. Adhesions in pelvic disease are often the bulk of all the trouble, and hence they must not be left. Abscess of the pelvic organs is rarely a simple sac, and, therefore, cannot be cured by mere puncture. That once in a while such a case is met is no argument by which a general method is to be laid down. Enucleation and removal, drainage and freeing adhesions is the only proper mode of procedure.

A word now as to conditions following operation, traceable often to bad care of the patient or to improper surgical procedures. At the head of the list is ventral herniæ. Many patients are directly responsible for their own condition in this respect. Too early rising, too early laying aside the bandage, and foolish physical exertion, such as dancing, riding and the like, frequently bring on the condition for which the surgeon is in no way responsible. But on the other hand,

over-anxiety of the surgeon to get an empty bed in his hospital or to chronicle a wonderful recovery, are among these secondary, non-surgical causes of this accident. The incision and its closure are to be carefully considered in this accident. A short incision, with the stitches uniformly introduced on either side so as to preclude turning in of the skin edges is this the best safeguard against accident. Personally I do not agree with those who introduce layer after layer of sutures. Again it is a recognized fact that incision through one of the recti, is less apt to cause hernia than linear incision. I submit that a series of carefully watched operations on this line would be of the greatest interest.

I have now gone over some of the chief causes of accident and complication in abdominal work, enough at least to give you food for thought, in the lines of real experiences without any theory whatever, and it remains for me at this time only to refer briefly to some of the after conditions of operation for this set of diseases, which naturally are to be expected. First are the phenomena attending the removal of the appendages. All women are not affected alike. Some endure their removal with immunity from discomfort, while others are for a long time annoyed with the phenomena attending the menopause. Hence it is not safe at once to promise perfect comfort to these patients, nor indeed to tell them even that the menopause will infallibly at once ensue. Some women persist in periodic hemorrhages, some cease at once, others continue more regularly than ever. The why of all this is not clear. Again in chronic cases, where the pain and discomfort has lasted long the recovery is often more or less tedious. Pain has become engrafted upon the organism and time only will remove it. To such patients must be given encouragement to await patiently the gradual restoration to health, just as they would expect to do in the external surgery of the body. Miracles are not to be expected here, neither is it fair to promise them. The same careful consideration of all the probabilities of the case should here be made; the same honest expectation of life and health afforded; no more, no less.

The manner, matter and methods of

abdominal surgery have to deal with humanity in channels that most concern it, and hence they afford scope for the widest humanitarianism, the truest philanthropy, the bravest hearts.

Our profession is adjusting itself to the spirit of the period; to its spirit of enterprise, research and invention. We now come to Chicago as to the world's great school, to this great city of the great West, which, in little more than half a century has become the second city of our country in population, and *very strongly second* in commercial importance; the enterprise of whose people could not be burnt out with the burning over of more than two thousand acres of the city's area. And here within its corporate borders has been built as by magic the "White City," in fitting celebration of the event that gave to mankind a new world. And thick peopled is this "White City," with those from our many states and from over the seas, all moving bewildered about what is so vast in suggestion, so immense with

what has been done, is doing and is promised. Its walls of themselves make all the world marvel at the creations of American genius and enterprise. Amid these creations we stand amazed by the beautiful designing of the architect, by the studied, skilled, cunning work of the mechanic; by that beauty, proportion and strength which has been evolved from rude and uncouth conditions, all illustrative of the manual dexterity, the strength, skill and wisdom of master workmen. As we note the achievements of mechanical and industrial art we feel the stronger assurance of the immense possibilities of our own art,—we do not look for results to peculiar inspiration but to hard work. Our aim should be to make our art the supreme one, as it is *the one* that most intimately concerns human physical well being, the need to be workmen, trained to surgical dexterity, to greater certainty and accuracy than that which directs the thought and hand of the sculptor.

CLINICAL LECTURES.

PES PLANUS; CYST OF THYROID; MULTIPLE URIC ACID CALCULI; SARCOMA OF JAW WITH SUSPECTED SYPHILIS.

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Six weeks ago I operated on this boy for painful flat-foot, chiseling off the head of the astragalus on each side, so as to allow the feet to become slightly inverted and arched. If you will notice the impressions of bare feet you will see that we naturally walk on the outer side of the foot. This boy, on the other hand, was walking with everted feet, bearing his weight on the inner portion of the soles. After the operation the feet were dressed antiseptically and encased in plaster-of-Paris, which remained on five weeks. The patient is about to leave the hospital, the wounds are entirely healed and the shape of the feet is all that can be desired. It will be a month or six weeks longer before the tissues will have become firm enough to permit the child to walk. If, even at the end of that time, there is any tendency to stretch and allow the foot to

regain its malposition, it will be necessary to apply a metal brace, suitably moulded to the lower surface of the foot, and then bending at a right angle and reaching up the side of the leg.

The first operative case is that of a girl of seventeen, with a tumor in the middle of the neck, which is probably a small goitre. In reply to questions which were not leading, she tells me that the tumor was first noticed at the time of puberty, there being at that time a small enlargement in the middle of the thyroid body. At each menstrual period, it has grown a little, receding somewhat before the next period but gradually becoming larger. This history is an illustration of the mysterious sympathy existing between the thyroid and the sexual organs of the female, a sympathy that is manifested in

the growth of the thyroid during pregnancy. In some ill-understood way, the thyroid has something to do with the elaboration of the blood corpuscles, and when we remember that during pregnancy and at the menstrual periods there are calls for the renewal of the blood and an increase in its elements, we may understand somewhat the connection between the enlargement of the thyroid and the state of the sexual organs. Sometimes after delivery the enlargement of the thyroid retrogrades; sometimes it does not. I have now under care two private patients who have had three children, and each pregnancy has caused an enlargement of the thyroid, both lobes being enlarged, though not symmetrically. In the present instance, it is the central portion of the thyroid body—I do not like to call it a *gland*—which seems to be enlarged. The girl came to me a little while ago asking what could be done, and I told her there were three ways in which the trouble could be treated: first, by applying or administering drugs, a method which would do little or no good; second, by the use of electricity, which sometimes helps the condition a little but which is always slow and often futile; third, by surgical interference which is immediate and radical in its relief. Although I said nothing to her to urge operation, she at once jumped at the chance and decided to have the mass removed. If the tumor involved the whole thyroid, I should be averse to operating, for it is known that the complete extirpation of the thyroid is sometimes followed by a peculiar vital depression and imbecility to which the name *cachexia strumipriva* has been applied. But we have learned by experiments that a portion of the thyroid, even four-fifths, may be removed without danger, the remaining structure being sufficient to perform the function of the whole body.

This tumor is probably cystic.

[The tumor was exposed by a median line incision and found to be pedunculated. It was ligated with cat-gut and cut off from the small pedicle; the external suture was of the subcutaneous, continuous kind, in order to avoid cross-marks in the scar. The bandage over the antiseptic dressing was extended below the axillae in order to prevent disarrangement.]

The next patient is a decrepit old man,

somewhat emaciated, who has suffered for at least two years with such bladder symptoms as frequent micturition, with direct and referred pains. He has been compelled to give up his occupation and, as he feels better in the recumbent posture, to spend most of his time on the lounge. His symptoms point either to enlarged prostate or to a calculus, or both, with consequent irritability of the bladder. He has been sent here from quite a distance, one of his attending physicians having touched a stone with a sound. On my first examination with ordinary manipulations I failed to discover a stone, and even the assistance of the finger in the rectum did not avail. I then drew off the urine and filled his bladder with a boric acid solution till he complained of distention, and then passing the sound I touched the stone. A difficulty in introducing the sound and the rectal examination showed also that there was an enlarged prostate, and, through the patient had just emptied the bladder as he supposed, nearly half a pint of residual urine was drawn off by the catheter, having been retained on account of the prostatic enlargement. I want to impress on you the fact that a stone which eludes ordinary searching may be detected by first distending the bladder.

Two questions arise, what is the character of the stone, and what is the best means of removing it? The urine is acid now and although the nucleus of the stone may be phosphatic, the shell at least is probably composed of uric acid. Uric acid calculi are always hard and difficult to crush, and an attempt to remove the stone in fragments through the urethra would be prolonged to a hazardous degree. I found also at my examination that the end of the sound caught in one or two places in the interior of the bladder, showing that there are pockets in which some of the fragments of the stone might lodge and form nuclei for other calculi. We must have recourse then to a cutting operation, and I have decided to enter the bladder by the supra-pubic route, which is not the quickest but which gives the best opportunity for exploration. The perineal section to a man used to the manœuvre is a rapid and may be made a brilliant operation, but it may be difficult to find the stone afterward. The supra-pubic section takes a few minutes while the

perineal requires only a few seconds, but by choosing the former, I run no risk of injuring the prostate, and I can find the calculus more readily and extract it entire. The supra-pubic method or *sectio alta*, was in vogue many centuries ago, but was abandoned for the perineal operation and has been revived only during the present generation. By many surgeons it is now used almost to the exclusion of the perineal operation. I do not believe however, that any one method is of intrinsic superiority, and think that each particular case should be studied and the decision made as to the preferable method in accordance with its special features.

The shaving of the field of operation has been deferred till anæsthesia is complete, in order not to alarm the patient who is quite timid. The urine is now withdrawn and the bladder filled with a boric acid solution. The attempt to pass a regular stone searcher with an abrupt curve, meets with considerable difficulty, but this large steel sound passes easily and you can hear the click of the instrument against the stone, which seems to be a large one. With the bladder distended, the peritoneal covering is raised some distance above the pubis, so that it is easy to enter the bladder without penetrating into the peritoneal cavity. The longitudinal incision in this instance, fails to encounter a plexus of veins which is often found in the prevesical space, and the hemorrhage is not annoying. The handle of the sound is now depressed so as to present the other end as a guide for the incision into the bladder, but before the knife is used I will pass two heavy cat-gut sutures through the bladder wall and hold their ends with hæmostats till we need to tie them. It would be more difficult to get the threads in a position with the bladder empty and collapsed. A considerable gush of fluid follows the penetration of the knife, and on inserting my fingers I find four calculi, which you see are hard and have the characteristic appearance of uric acid. The prostate is so much enlarged as almost to tempt me to remove a part of it, but the patient is old and feeble, and I do not feel justified in adding to the necessary shock of operation. Behind the prostate is a pocket in which residual urine has remained and caused so much discomfort and in it I find a fifth calculus.

After thus cleaning out and washing the bladder with boric solution, I sew the margins of the wound up to those of the skin wound with a single suture on each side, preferring this to closing the incision, partly from a desire for the increased security of this method, and partly because his bladder needs now rest and free drainage, both of which can be thus better secured. A double catheter is passed into the viscus so far that its lower end projects down to the pocket behind the prostate; it is held in this position by a silk suture passed through the skin. Iodoform gauze is placed around it and in the wound. A large mat of dressing, perforated for the passage of the tube, is applied over the lower part of the belly, held in place by adhesive strips and a double spica bandage, and the patient put in bed.

[He made a rapid recovery].

The next case is rather obscure, and I am unable to tell you in advance either its exact nature or the method of operation that will be followed. The patient is a man about fifty, who presents enlargements under and apparently attached to the lower jaw bone. On one side the mass is rather soft and small, on the other it is hard and nodular and considerably larger. It is eight months since the trouble was first noticed and in that time the masses have grown so as to interfere with breathing and swallowing, though they are not very prominent externally. The patient has given to one member of the staff an account of syphilis, and has denied all venereal history in his statements to another. It was decided to give him for a time the benefit of the doubt and to treat him upon a tentative diagnosis of syphilis. It must be borne in mind, however, that the venereal history is contradictory and the objective evidences not conclusive. Moreover, the mass has continued to grow in spite of anti-syphilitic treatment and the location is an unusual one for the syphilitic gumma. We must also consider the possibility of the growth being sarcomatous and, for the sake of completeness, we might think of actinomycosis. Such a case is rarely seen in the human being but the patient is a common laborer and he might have been exposed to the fungus. Acting on the supposition that the tumor is a gumma,

breaking down in the interior, I have made preparations to open and curette it and to cauterize the walls of the cavity. In this way the patient would be relieved of actual pressure symptoms and with general treatment would probably recover so that the immediate removal of the entire mass would be unnecessary.

The case is at least a lesson to you that an exact diagnosis before the removal and examination of a growth is often extremely difficult, if not sometimes impossible. But I want you to learn an even more important lesson, namely, that in some instances an operator can not tell beforehand just how he will proceed and each step in the operation may depend upon some unexpected development, so that the prudent surgeon must be prepared for emergencies as well as for an anticipated line of action. You see among other instruments in the tray bone-forceps and the chain saw, so that if we have to deal with a malignant growth affecting the maxilla, the operation may not be delayed. These instruments, however, will probably not be needed.

Partly for diagnostic purposes I shall attack the smaller and softer mass first.

On opening into it I find that its interior seems to have undergone cystic rather than suppurative degeneration, and this fact throws doubt on the diagnosis of specific trouble. Before attempting to dispose of this growth, I will open into the larger tumor to see if both are of the same nature. This tumor cuts, not like a gumma, but like cartilage and, in spite of its size, I find no breaking down in its center, whereas a gumma of this size would be almost certain to contain a cavity. We must abandon the diagnosis of syphilitic gumma and proceed to eradicate a sarcomatous mass which involves the lower jaw. The precaution of having in readiness the bone-saw and forceps was a wise one, for I shall have to remove a portion of the maxilla between the angle and the symphysis, at least on the side of the larger growth.

[Operation proceeded without difficulty, and the patient's condition was for the time being very much improved. But later a very slow recurrence with infiltration was observed, and further operation was deemed inadvisable. He went to an adjoining alms-house and finally disappeared from observation.]

COMMUNICATIONS.

THE EYE-SYMPTOMS OF BRAIN DISEASE.

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In the last few years quite a number of cases have come under my observation in which the examination of the eyes, especially with the ophthalmoscope, revealed pathological changes of the visual organ which gave the first hints of an affection of the central nervous system and proved of great value in determining the diagnosis of a brain disease. They thus belong to a department of medicine in which the fields of the general practitioner and of the oculist border on each other, and in which both ought to be interested alike.

The reason for the frequent association of ocular affections with those of the

brain will at once become apparent if we remember what a very large extent of the latter is placed in relation to the eye. This may advantageously be looked at from four different points of view: *first*, the developmental; *secondly*, the anatomical relation, inasmuch as the optic fibres from the optic foramen to the visual centre are situated within the cranial cavity; *thirdly*, the connection by the ocular, the 'fifth,' the facial and sympathetic nerves; and, *fourthly*, the common causes for associated diseases of both organs.

Consider the eye developmentally, and the retina and optic nerve are to be regarded as a prolongation of the brain. In a very early period of foetal life, when the anterior portion of the medullary tube

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has been transformed into the three cerebral vesicles, from the foremost of these a new vesicle, the primary ocular, grows out, remaining connected with it by a hollow tube—the first trace of the optic nerve. From the cell-layer covering its pole the lens develops, pushing its wall inwards, so that the hollow sphere is converted into a shell consisting of two layers—the secondary ocular vesicle. Its inner sheath becomes later on the retina and its outer layer the pigment epithelium. In this way the retina and optic nerve are advanced or external parts of the brain. Therefore it seems quite natural that pathological changes in the intracranial portions of the brain, that is in the brain proper, may be propagated to the external parts, that is retina and optic nerve, and that these may show alterations indicating associated or analogous affections of the encephalic parts. The three sheaths of the optic nerve are a direct continuation of the three meninges, the dura mater, arachnoid and pia mater, separated by the subdural and subarachnoidal spaces, which communicate with the identical cerebral spaces. The subdural space of the optic nerve forms in the normal eye only a very narrow fissure, whereas the larger subarachnoidal represents the so called intervaginal space. The spaces are lined with endothelium and are to be considered as lymph-channels of the eye. Schwalbe, Quinke, Deutschmann and Gifford demonstrated that in these spaces there is a lymph current from the brain to the eye.

We must be familiar with these facts in discussing one of the most important ophthalmoscopic symptoms in brain diseases, the optic neuritis usually called choked disc or papillitis. In this disease the optic disc presents the aspect of congestion with oedema, increased redness, blurred edges, radiating striation of whitish nerve fibres spreading into the retina, and sometimes small hemorrhages with general cloudiness. The arteries are concealed at their emergence and narrowed. The veins are dilated, are tortuous, look dark and as if cut into pieces. The swelling of the disc, which in some cases may become so intense that it forms a fungi-form tumor, its sides overhanging the retina, is recognized by the relative displacement of different parts by parallactic movements of the lens, and, in the direct method of

ophthalmoscopic examination, by its changed focus in comparison to the retina amounting sometimes to four diopteries. The adjacent portion of the retina may take part in the inflammation and present areas of opacity and hemorrhages. If it extends to the macula, the familiar stellate form of white streaks and dots, as seen in renal disease, appears, caused by a degeneration of the radiating fibres of the fovea centralis.

The *pathological anatomy* of papillitis consists of a swelling of the disc, visible even to the naked eye, rising from two to three millimetres above the level of the choroid. It is caused by dilatation of the blood vessels, oedema, proliferation of nuclei, emigration of leucocytes and hypertrophy of nerve fibres. The nuclei may form a thick layer around the blood vessels and the nerve fibres. The coats of the blood vessels are thickened by nucleated tissue, the nerve fibres show varicose enlargements from an accumulation of fatty globules which are the products of a degeneration of myelin. Sometimes colloid corpuscles are found between them. The nuclear layers of the retina are thickened and the fibres of Müller hypertrophied. The trunk of the optic nerve shows changes of an inflammatory character, sometimes as far back as the chiasm, increase of nuclei, distension of vessels and thickening of its trabeculae. The sheath is mostly distended, reaching sometimes such a considerable degree that it forms an ampulla close behind the globe. The development of papillitis may take place, in the cases of rapid course, in two to three weeks, remain at its acme two weeks and then subside. This happens mostly when depending upon a cerebral affection of transient, and especially of syphilitic character.

But in other cases optic neuritis may be very chronic; for instance, when caused by a cerebral tumor which progresses very slowly. Then it may last for weeks and months, and then subside and pass into atrophy. The papillitic atrophy is brought about by the shrinking and strangulating influence of the connective tissue into which the newly-formed inflammatory products have been transformed. By its contraction the vessels become narrowed and may be partly concealed. The disc itself assumes a greyish tint, the lamina cribrosa remaining

perfectly veiled. Its edge is blurred, although in some cases it may become so sharply defined that it is very difficult to trace the atrophy to its origin.

One of the strangest peculiarities in some cases of papillitis of much marked pathological change, is the integrity of sight, visual field and color perception. In others it is impaired or lost. Pain in the eye is very rare, and if in the head, is due to intracranial affection. The impairment of sight comes on rapidly or slowly, never suddenly. Vision may fail in the course of a few days. The field of vision is affected in various ways. The mechanism by which sight is impaired is very important, especially in regard to the prognosis. In intracranial disease the loss of sight may be caused by the intra-ocular changes of the papillitis or by an affection of the visual fibres or centres. A sudden blindness in optic neuritis comes on only when associated with mischief farther back in the optic path. The amblyopia caused by the inflammatory process during its acme may nearly disappear as the inflammation subsides, but again be renewed by the subsequent contraction of the connective tissue.

Even after the papillitis is healed with restoration of vision, this may be lost entirely from an affection of the optic fibres within the cranium and without fresh ophthalmoscopic changes. Thus the discrepancy between the affection of sight and the course of papillitis indicates retro-ocular affections. Intracranial diseases are the most common causes,—tumor, meningitis, abscess, hydatid disease and softening of the brain.

Cerebral tumor ranks highest in the etiology of papillitis, which is *the* ocular lesion characteristic of it. According to Gowers, neuritis occurs in about four-fifths of the cases of tumor. Annuske and Reich collected 88 cases with ophthalmoscopic examination and autopsy, and found that in only five per cent. there was no ophthalmoscopic change.

Glioma, sarcoma, tubercle and syphiloma are usually associated with optic neuritis. But this has no peculiar features enabling us to make a diagnosis in regard to the nature, position or size of the tumor, since it was found to be absent in some cases of glioma, which invaded the brain substance only, not increasing its bulk.

The mechanism by which optic neuritis is induced by encephalic disease has been explained by various theories. Von Gräfe assumed that the increased intracranial pressure caused an impediment to the return of blood from the eye to the cavernous sinus, thus leading to hyperæmia and dilatation of the central retinal vein. This, however, did not explain the origin of inflammation. In addition, its presumption was not anatomically correct, in that the cavernous sinus is assumed to be the only outlet for the central retinal vein. Sesemann (in 1869) demonstrated that this opens either into the superior ophthalmic vein or directly into the sinus after anastomosing with the superior ophthalmic by large branches. The superior ophthalmic communicates partly with the sinus, but empties by far the greatest portion of its blood through the angular into the anterior facial vein, which will at once relieve the affect of intracranial pressure upon the cavernous sinus.

Manz and Schmidt called attention to the frequently observed distension of the optic sheaths in papillitis, caused by cerebro-spinal fluid forced into the subvaginal space by the intracranial pressure, which might produce papillitis by the compression of the optic nerve and its vessels. In many post-mortem examinations of cases of choked disc however, this distension, or hydrops of the sheaths, was not found at all. Leber, and later Scimemi, attributed to the pathogenic material in this fluid the exciting cause of neuritis. Deutschmann (1887), by recent experimental investigations, came to results in favor of Leber's opinion. He injected agar-agar, stained with india-ink, into the subvaginal space of the rabbits eye, either directly or through the subdural space of the brain. When he proceeded aseptically, he found no choked disc even in those cases in which, after forced injections, the post-mortem examination showed a layer of black agar-agar, one-half to one millimeter thick, covering the whole surface of the brain and so completely filling the subvaginal space that the ophthalmoscope revealed a black ring around the disc. If he injected agar-agar with an infusion of staphylococci into the optic sheath, or tuberculous pus into the cranial cavity, the typical picture of choked disc was obtained. In all these cases inflammatory changes of the papilla

existed; never compression of the vessels. He thus comes to the conclusion that, in man, mere increase of pressure does not cause choked disc. This follows only when pathogenic matter, of either chemical or parasitic nature, enters the optic sheath in the cerebro-spinal fluid. In cerebral tumor, the pathogenic material is produced by the metabolism in the tumor. The increase of the intracranial pressure comes only so far into consideration as it favors the entrance of the pathogenic material into the optic vagina. Zellweger (1887) came to the same experimental results with injections of sterilized emulsion of cinnabar. Furstner (1889), from pathological examination, infers that, by changes in the optic sheaths and by the perineuritis which he found, impediments arise to the lymph circulation, especially its outflow, which entail a process of swelling and proliferation and later on destruction of the nervous substance. Benedict ascribed it to the vaso-motor nerves. Hughlings Jackson and Galezowski consider the descending optic neuritis as a propagation of the inflammation of the brain.

From all these observations it seems to be most probable that the papillitis dependent upon intracranial diseases originates in a descending inflammation of the optic nerve, the evidence of which may be traced in the nerve itself and in its sheath, conveyed from diseased portions of the brain into the subvaginal spaces by a powerful lymph-current. The pathogenic material will accumulate mostly at the cul-de-sac of the space next to the globe and therefore produce the most striking changes at the intra-ocular end.

Purulent irido-choroiditis gives another example of the rapid transportation of purulent matter from the cranial cavity through the optic sheaths into the perichoroidal space by means of the lymph-current. The mechanical congestion in choked disc is due to a compression of the vessels by inflammatory products in the substance of the papilla. The intracranial pressure, as well as the distension of the sheath, alone do not cause but may intensify the process. Direct pressure on the optic fibres in the chiasm, at the optic foramen or at the base of the brain, by tumors, internal hydrocephalus, distended third ventricle, meningeal exudations, aneurisms or exostoses of

the cranial bones may cause simple atrophy of the optic nerve without preceding papillitis. Blindness, however, may occur in diseases of the brain even without ophthalmoscopic changes.

This brings us to the second point of relation of the eye to the brain—namely, the *anatomical*. In order to get an exact idea of the range of the visual nervous system we have to trace it from its peripheral termination and follow it to its nuclei and centres in the cortex of the brain. It will be readily conceived that we cannot do this anatomically or histologically. It is only possible by a combination of the conclusions obtained by anatomical, pathological, clinical, physiological and experimental researches. The peripheral termini of the visual organ—the cones and rods of the retina—which are excited by their adequate stimulus, the light, are connected with nerve fibres without medullary sheaths, being simple axis-cylinders spreading in the innermost layer of the retina. They all converge in the optic disc where they assume neuroglia and form the trunk of the nerve. In the orbit this, about thirty millimetres long, runs to the optic foramen and meets its partner of the other side in the chiasm.

In regard to the position of the fibres in the optic nerve supplying the different portions of the retina, a case published by Schmidt-Rimpler (*Arch. of Ophth.*, xix., p. 133) gives us valuable information: A man received, from a blow with a spade, a comminuted fracture of the posterior portion of the right parietal bone, a few centimetres below the sagittal suture. Left-sided hemianopia of the right eye resulted. The post-mortem examination revealed constriction of the upper part of the right occipital lobe. The secondary degeneration showed the following distribution of the fibres in the optic nerve: "In the vicinity of the eye, the fibres supplying the macula lie in a wedge-shaped bundle on the temporal side of the nerve; the fibres of the temporal portion on the upper and lower periphery, encroaching somewhat upon the temporal as well as the nasal side; the fibres of the nasal portion in a part embracing the centre of the optic nerve and the middle third of the nasal half of the periphery. In the neighborhood of the optic foramen, the fibres which supply the temporal portion of the retina occupy the lower periphery of the nerve, a

larger portion of the nasal and a small, lower one of the temporal periphery; those supplying the nasal portion of the retina occupy especially the upper periphery; whilst the macular fibres are found more in the centre." The assertion of Siemerling that the uncrossed fibres should lie on the lateral side of the nerve seems not proven; nevertheless individual differences are possible.

This way of tracing the visual fibres, granted in this case by nature, was anticipated and experimentally cultivated by Von Gudden as a special method of investigation—the degeneration method or so-called atrophy experiments—and it is due to this mode of research that we owe our chief knowledge of the arrangement of the optic fibres in the chiasm, and of their further course in the brain. His experiments on animals proved a semi-decussation of the fibres in the chiasm in the rabbit, cat and dog, and his studies of horizontal sections of the human chiasm resulted in his observation that the fibres which cross lie mostly in the lower half of the chiasm and those which do not cross in the upper half.

Michel is perhaps the only author who insists on the total crossing in the chiasm in the higher mammals. But his observations are conclusively refuted by the experiments of Singer and Munzer, and, very recently, of Darkschewitsch (*v. Graefe's Arch.*, 37, 1891). Bernheimer (*Arch. of Ophth.*, xx, 1891), following the course of the optic fibres by means of the development of their medullary sheath in thin serial sections of the human chiasm, proved that there are fibres in the upper half of the human chiasm which pass directly from one tract to the nerve of the same side, and that the number of the crossed fibres is considerably greater than the number of the direct ones. From these and other observations we are justified in taking for granted that the fibres of the chiasm intricately interlace, and cross one another so that, of the optic nerve, about three-fifths—representing the fibres from the nasal side of the retina—pass into the opposite tract, and two-fifths—from the temporal half of the retina—enter into the tract of the same side.

According to Siemerling, the uncrossed bundle lies in the centre of the tract and never reaches the periphery. Delbrueck (*Arch. f. Psych.* vol. xxi 1890) says:

"In the tract the rule seems to be that the direct fibres are mingled with those that cross." Both tracts diverge backwards and form a rhombus with the cerebral peduncles, pass under these and over the gyrus hippocampi and divide into roots. The lateral root goes to the corpus geniculatum laterale; to the thalamus opticus, especially its posterior portion the pulvinar, and to the anterior corpora quadrigemina. In the latter, commissures of optical fibres of both sides are observed, which Charcot took for the complemental decussation of the fibres not yet crossed; but this theory is unproved. These ganglia are the primary optical centres from which the radiating visual fibres of Gratiolet spread into the white substance and the grey cortex of the occipital lobe.

The occipital lobe is considered to be the centre of vision, although the exact delimitation of the visual sphere has been a matter of controversy in the investigations of many physiologists. Besides, it is now generally agreed that each species varies somewhat in its functional areas, so that we cannot simply apply physiological results in animals in forming an exact localization of the human function, but they are of great help. Munk first showed that unilateral extirpation of the visual sphere, by a section in the parieto-occipital fissure, localized it exclusively in the occipital lobe and produced homonymous hemianopia from paralysis of the corresponding sides of both retinae. Ferrier (*Croonian Lectures*, 1890) supposes that Munk's operations for removal of the occipital lobe would be the cause of secondary implication of the angular gyrus or its connections. He thinks, from the results of bilateral destruction of the angular gyrus described by himself, Munk and Schäfer, "that the angular gyri are more particularly related to the area of distinct vision and, accordingly with the maculae luteae. The pathological facts in man render it necessary to assume that the region of the yellow spot is represented in the angular gyrus of each hemisphere, though more in that of the opposite side." "It is in the higher visual center, where the two half-vision centres are probably blended, so that the former can compensate its fellow of the other side to some extent, whereas the half vision centres cannot supplement each other." (Gowers.)

The partial defects in the visual field seem to be dependent on partial lesions of the optic radiation and not of the cortex. The hypothesis of Munk and Schäfer, that the different portions of the retina are represented in corresponding regions of the occipital lobe, cannot be considered as a fact. Ewens has, under the direction of Ferrier, collected and analyzed the majority of the recorded cases, with necropsies, of hemianopia, depending on cerebral lesions with implication of other regions. Of 41 cases of hemianopia, 15 were from diseases of the occipito-angular region, 2 of the angular and supramarginal gyri only, 15 from disease of the occipital lobe alone. In the other cases the lesions were of a diffused character, the angular gyrus being implicated in all. Seguin and Nothnagel think that the cuneus, and Wilbrand that the apex of the occipital lobe, have a special relation to visual perception. According to Ferrier the visual area of the cortex is not a merely functionally differentiated region capable of replacing or being replaced by other cortical areas, in as much as destruction of the visual centres leads to atrophy in the primary optic centres, optic tracts and nerves; and conversely, destruction of the optic radiations leads to atrophy strictly confined to the regions included within the visual zone.

The chief *functional disturbance* in lesions of the visual path from the optic centres down to the chiasm, is homonymous or lateral *hemianopia* of the opposite halves of the visual field, which may be complete or incomplete. The line of division is usually sharp and vertical, and the blind sides usually have no sensation of light. Central vision is often preserved corresponding to a slight projection of the line of separation for three to five degrees into the blind side at the region of the macula. But the defective half never encroaches upon the seeing side beyond the point of fixation, so that this would be situated in the blind portion. The explanation of this was the assumption that the macula of each side receives fibres from each tractus. If this be the case, in lateral hemianopia from a disease of one occipital lobe, destruction of the other occipital lobe would produce absolute blindness through bilateral hemianopia. Foerster, however, observed such a case of bilateral hemianopia. (V. Graefe's

Arch., vol. 36, No. 1, p. 94), in which the area of central vision was preserved in both halves of the visual field. He thinks it therefore to be more reasonable to attribute the preservation of central vision to a specially favorable arrangement of blood vessels supplying the sphere of distinct vision in the occipital cortex. Even if by thrombosis of the main vessel supplying the occipital lobe, the nutrition of the cortex in a large extent is cut off, the zone of distinct vision, by the numerous anastomoses of its vessels, receives sufficient nutrient material to preserve its function. Schweigger (*Arch. of Ophth.*, 1891, 1, p. 84) confirms Foerster's hypothesis from the observation of a similar case of bilateral hemianopia with preservation of a limited central field of vision, which he supposes to be due to a particular arrangement in the central apparatus. Foerster infers from his case that the cortex of the occipital lobe is the centre for the sense of locality and the topographical ideation and representation, no matter whether acquired by the visual or tactile organs or the perception of muscular movements, or by description.

If homonymous hemianopia shall be of *localizing value* concomitant symptoms are to be looked for. For distinguishing tract and central hemianopia Wilbrand has suggested the following test advocated by Wernicke and Seguin: If the pupil does not react to light thrown on the hemianopic portion of the retina the optic tract is affected, because the pupillary as well as the visual fibres lie in this path, being connected with the oculo-motor centres by the ganglion habenulae, the posterior commissure and the nucleus of Von Gudden. The pupillary fibres have a thicker calibre than the visual fibres according to Key, Retzius and Von Gudden. Lesion of the cortical centres causes hemianopia with complete hemiplegia, and aphasia is likely to be caused by a softening of the gyri at the fissure of Sylvius—namely, the inferior parietal lobule, the supramarginal and the angular gyrus. The destruction of the latter, especially in the left hemisphere, is generally associated with the special form of sensory aphasia, word-blindness or *alexia*. The patient sees the words, but cannot read them from a loss of his visual memory of symbols describing objects. In *paraplexia* he reads other words than those which he

wants to read. *Dyslexia*, which ought to be called *dysanagnosia*, was first described by Berlin, in 1883, as a disinclination to read, as if it were impossible to make the necessary mental effort. Such a patient is unable to read to himself or aloud more than four or five words; he then becomes exhausted. Vision may be perfect, and there may be no asthenopia from a refractional error. In six autopsies lesions were found in the left hemisphere, in Broca's region not far from the third frontal convolution.

The other kind of hemianopia, heteronymous hemianopia, embraces those cases

in which either both temporal or both nasal halves of the visual field are wanting. Lesions of the central portion or of the anterior or posterior angle of the chiasm causes temporal hemianopia by affecting only the fibres that cross from the nasal half of each retina. Damage to both lateral angles of the chiasm causes nasal or medial hemianopia, by affecting only the non-decussating fibres. The latter is extremely rare. Monocular hemianopia is the consequence of lesion of one nerve in front of the chiasm or at one lateral angle.

EVERY DAY SURGERY.*

P. O. KEEF, OCONTO, WIS.

The surgeon of to-day cannot afford to treat the most trivial injury carelessly.

The study of bacteriology shows beyond doubt, that wound infection is due to the presence of pathogenic germs which can be excluded by proper antiseptic precautions. This knowledge is not confined to the profession, but people know enough about blood-poisoning to ask some very embarrassing questions when certain symptoms manifest themselves, and if a life or limb is lost the surgeon is liable to be defendant in a suit for malpractice.

It is only by a thorough knowledge of the causes of infection and by the most scrupulous attention to detail that we can do good, clean surgery. The wound or field of operation and everything which may come in contact with it, must be thoroughly sterilized. It is not sufficient to apply a pad of iodoform gauze or other antiseptic dressings over a wound, as they have no power to exert any influence over germs deeply seated—and they need not be very deep either, as the antiseptic must come in actual contact with every germ and remain so for some time to destroy its vitality. I have had a good many incised and lacerated wounds come under my care after they had been dressed elsewhere quite expensively in the matter of antiseptics, but the first and most important point, aseptisizing the part, was neglected or imperfectly done, as underneath the

dressings the wounds were freely suppurating.

No doubt those men thought they were doing antiseptic surgery, and will in time either have their eyes opened to the fact that some of the details were lacking, or they will join the rapidly decreasing army of unbelievers.

The abdominal surgeon rarely infects the abdomen, much less should we have infection in our ordinary operations.

The laudable pus of our older teachers is a disgrace to the surgeon of to-day, and the law requires better work of the country doctor of the present time than it did of the city expert of twenty years ago. It seems to me that it ought to be almost impossible for the recent graduate to do unclean surgery, as he is taught so thoroughly by precept and example that he could not think of making or touching a wound without proper preparation. It is different, however, with the older men in the profession. Many of us were planting microbes before antiseptics were ever thought of.

We have to learn the new way and also to break ourselves of old habits, not an easy thing to do. I have been doing what I called antiseptic surgery for about twenty years, but until within about the last five years it was very unsatisfactory. The following report of cases shows the value of thorough asepsis and antisepsis, and that we may now expect to succeed in the most desperate cases.

*Read before the Wis. State Medical Society, May, 1893.

CASE I. May 25th, 1891. Arthur B.; came to me on account of sore leg. He was terribly emaciated, had frequent chills; temperature 103°; pulse 130. I found tarsus and tibia entirely broken down, knee joint filled with pus, and on amputation between middle and lower end of the thigh, found pus in the medullary cavity. I curetted thoroughly with a sharp spoon and irrigated with 1-1000 sublimate solution, and after introducing a few strands of coarse catgut the whole length of the canal, I closed the wound with sutures leaving the ends of catgut protruding. An antiseptic dressing was applied, not to be removed until indicated by abnormal mal temperature. May 26th, temperature 101°; pulse 130. May 27th, temperature 98½°; pulse 100; eating and sleeping well. Temperature remained normal after this and patient improved rapidly, and on the fourteenth day the dressings were removed and the stump found to be entirely healed. The ends of catgut came off with the dressing, leaving a small granulating spot which healed in a few days. Patient went home three weeks after the amputation perfectly well.

CASE II. Adam H., age 29 years, a Bohemian laborer, called me on June 6th, 1891, on account of an attack of appendicitis. I advised an immediate operation as this was the second attack within four months. He would not consent and I did not see him again until June 13th. He was then in very bad condition. Profuse perspiration; temperature 104°; pulse 140; severe pain in the lower part of abdomen, which was bulging and dull. His bowels had not moved for six days, enemas failing to bring away anything, and there was a constant profuse discharge of colorless glairy mucous from the anus. On the night of June 13th, he came to my hospital for an operation. The next morning his condition seemed much worse. There was uniform distension of the abdomen and patient seemed in a state of collapse. I operated immediately by an incision over the appendix, allowing the escape of gas, pus and feces. The incision was carefully enlarged upwards, the abdomen and pus cavity thoroughly irrigated, first with hot sterilized water then with a 1-3000 sublimate solution, followed again by irrigation with a large quantity of hot sterilized water. On examination I now found that the appendix had sloughed off

and from this perforation the cæcum was torn allowing pus and feces to enter the peritoneal cavity. I sutured the edges of the torn intestine to the parietal wound and introduced a large and a small drainage tube to the bottom of the abscess cavity. The patient was now placed in bed and surrounded with bottles of hot water. Reaction was very slow. The cavity was irrigated with hot Thiersh's solution every six hours and it was not until the fourth day that any sign of improvement took place. He then commenced to gain and on June 29th, the abscess cavity was obliterated and I attempted to close the fecal fistula by paring the edges and suturing. The attempt failed as did several other attempts that I made. During the next three months I tried all the schemes I could think of, but each time after a few hours he would have severe pain and the fistula would burst open. I now proposed to unite the ilium with the colon to which he readily consented, and on October 12th, I made a median incision below the umbilicus and made an anastomoses of the lower end of the ilium and the descending colon by means of Senn's decalcified bone plates. The bowels moved naturally the next morning for the first time since his sickness began, and the fistula healed without any treatment except his wearing a pad of borated cotton pressed against it. I did not look for the site or cause of obstruction of the colon because just after making the abdominal incision as I was lifting out the intestine the patient became asphyxiated and I had to complete the operation as soon as possible. On account of the ilium opening so low in the colon I expected that the feces would be fluid, but I have asked the man about it a number of times since, and he says he is all right and as well as ever.

CASE III. On June 27th, 1891, Thomas H., age six years, while playing in the barn fell with his knee on a scythe splitting the patella longitudinally from the center slanting outwards, so that it cut off about one-fourth inch of the articular surface and opened the capsule of the joint to the extent of one and one-half inches. The joint was filled with blood and hay seed and in order to properly irrigate I removed the smaller piece of patella and cleaned the joint thoroughly. The capsule and deep tissues

were sutured closely with fine catgut and the skin with silk sutures. A plaster of Paris cast was applied over the antiseptic dressing and left on for eight days. When removed the wound was entirely healed and passive motion made, which was slightly painful at first, but in a few days he began to walk with as good a joint as before.

CASE IV. On September 27th, 1892, Mrs. C. G., age 28 years, was sent to me by Dr. Brett, of Green Bay. She began to have severe pain in the left side, in February, accompanied with chills and fever. When I first saw her she had lost seventy-five pounds in weight in seven months. She was still suffering severe pain and had slight chills. Her temperature was 101° , and remained so until I operated on September 29th. Dr. Phillips, of Menominee, who was present saw her at the Providence Hospital in Menominee about three months before, and said he could by pressure reduce the size of the tumor, by forcing the pus through the tubes into the uterus. An incision was made along the linea alba and the tumor found firmly adherent. It was carefully enucleated. During the operation a few drops of pus appeared to ooze from the tumor where a firm adhesion had been broken up, and I packed the abdomen with sterilized gauze in case of possible rupture. The remaining adhesions were broken up and the tumor successfully removed. The pedicle and all bleeding points were ligated and cauterized, and a large rubber drainage tube with a wick of iodoform gauze placed in Douglass' pouch and the abdominal wound closed. Two hours after the operation I gave $\frac{1}{4}$ gr. morphia which was the only dose required. Temperature in the evening was $100\frac{1}{4}^{\circ}$. Next day, September 30th, temperature 100° . October 1st, temperature $98\frac{1}{4}^{\circ}$. I removed drainage tube. The temperature remained normal after that and abdominal wound healed by first intention, except site of drainage tube which healed in a short time by granulation.

During her four weeks stay at the hospital, patient had gained twenty-two pounds in weight and has been well since. The tumor was between four and five inches in diameter, consisting of one large thin-walled cyst filled with intensely foul smelling pus, and a few small cysts filled with a transparent gelatinous fluid. The

fimbriated extremity was firmly adherent to the tumor, but the tube itself was somewhat thickened but contained no pus. I do not report this case on account of its peculiarities but because one of the physicians present, quite a prominent surgeon, is reported to have said afterwards that the operation was uncalled for and that the patient could have been cured by other means. Now, if an operation is not called for in such cases as this—when should we operate?

CASE V. Nov. 16, 1892, I was called to Gillett to see R. K., who on the evening previous received four bullet wounds from a 38 caliber revolver, in various parts of the body. One of them entered the abdominal cavity by passing through the left ileum about its center. It passed upwards and forwards and lodged in the left rectus. On cutting down on the bullet a few bubbles of gas escaped so the incision into the abdomen was completed and the intestines examined.

At one point in the small intestine there was some discoloration of the mesentery, and one side of the intestine had lost its glistening appearance. The descending colon was perforated and cut nearly half off, except a narrow bridge about $\frac{1}{4}$ inch wide between the two bullet holes. The mucus membrane was everted so that it completely filled both openings, preventing almost absolutely the escape of fecal matter, and I failed to force any out by pressure on the bowel until I cut the narrow bridge; thus nature had quite effectively protected the peritoneum and there was no hemorrhage to speak of. The wounded colon was repaired with a large number of Czerny—Lembert sutures. The peritoneal cavity was thoroughly irrigated and the abdominal wound closed. I left him $1\frac{1}{2}$ hours after the operation feeling well and he continued so until about noon on Nov. 18th, sixty-four hours after the shooting; he became restless; his temperature, which had been 99° to $99\frac{1}{4}^{\circ}$ fell to $96\frac{1}{4}^{\circ}$, the abdomen began to swell and became tympanitic. I saw him about 3 P. M. and he was in a state of collapse. I supposed the sutures had given away.

He died about 10 P. M. just seventy-two hours after the shooting. Autopsy was made eighteen hours after death by Dr. Hinch, of Gillett, who kindly sent me sections of bowel. The sutured colon was perfectly united, but in the small in-

testine were found three small perforations about $\frac{1}{2}$ inch in diameter—two on one side of the bowel about $\frac{1}{2}$ inch apart, and one on the other side directly opposite to them. I made a post mortem diagnosis of embolism of a mesenteric artery and necrosis of the corresponding part of intestine, probably the part found discolored at the time of operation. I think in all cases where the mesentery is injured, the only safe plan is to remove a V shaped portion of the in-

testine and unite by anastomosis or other means. It may be that many of the deaths after gun-shot wound are due to slight injury to the intestine or mesentery which is either not seen or thought not to be of any consequence, instead of failure of the part operated upon to unite.

If a post-mortem had not been made in this case I would still think as I did when I saw him the last time alive, that the sutures had given away.

FOREIGN SUBSTANCE IN THE EAR FOR THIRTY YEARS.

C. C. MOORE, M. D., PHILADELPHIA.

In March, 1892, F. L., æt. 73 years, came to my office for a troublesome winter cough so severe he could not rest at night. He had not laid down for some months, but slept in the upright position. This cough had been increasing for several winters and was apparently a case of chronic winter bronchitis of old age. He had not consulted any other physician though the coughing had been severe for some time. Objectively he was a large, strong man; respiratory sounds negative, pharynx red, congested from constant coughing, but I could detect no cause for it. Nares clear and mucous healthy. I clearly had a case of reflex cough. I looked in the left ear and it was normal in every way. He protested his hearing was perfect. I put the ear speculum aside, then thought I would complete the examination and look in the right ear, where a large piece cerumen that filled the canal was discovered. I removed it with the syringe and warm water. This revived his memory and he told me that thirty years ago, while driving along a woods, some insect flew in his ear. It annoyed him for about an hour, then suddenly quit; he gave this no more attention, but always thought his hearing was somewhat impaired on that side. Removing this substance cured his cough completely, for more than a year has lapsed since. In the centre of the cerumen was a grain of sand the size of a bird shot. This had formed the nucleus for cerumen. It had probably been thrown from the carriage wheel, and caused the sensation like the buzzing of an insect.

I consider the case exceptional, and it proves how misleading a symptom may be and that we can not always treat the symptoms. A cough, like a headache or neuralgia or pain, may be caused by disease remote from the locality of the annoying symptom.

The Justifiable Prevention of Conception.

The physician not infrequently has to warn against conception in cases where a pregnancy would endanger the life or the health of the patient. Pelvic contraction, abdominal and uterine tumors, etc., form such an indication. The advice to abstain from coitus is but seldom followed, and the means usually employed to prevent gestation (mechanical) are objectionable from a hygienic and ethical point of view. Kleinwächter has endeavored to find a remedy which would have none of the aforementioned drawbacks. He prescribes a cacao-butter suppository containing 10 per cent. of boracic acid, to be introduced high up into the vagina. These suppositories dissolve in about one hour, and the liberated acid destroys the spermatozoa. Bichloride of mercury in 0.001-gramme doses can also be used, but in that case a vaginal douche has to follow the sexual act. The solvency of the suppository is heightened by adding one grain of oleum olivæ. The author considers this a safe and sure remedy to prevent conception. Therapeutic effects may be combined by the adding of various drugs—for instance, tannin in cases of uterine catarrh.—*Medical Age*.

SOCIETY REPORTS.

THE SURGICAL SOCIETY OF LOUISVILLE.

Stated Meeting, May 8th, 1893.

THE PRESIDENT, DR. A. M. CARL-
LEDGE, in the Chair.

FATTY TUMOR.

DR. W. O. ROBERTS: This specimen is a fatty tumor which in itself does not amount to much, but the location from which it was taken makes it rather interesting. The patient was fifty-five years of age, and the tumor was first noticed three years ago; it was then quite small and was thought to be an enlarged gland in the carotid triangle of the neck. It has grown gradually. At the time of its removal, ten days ago, it had attained a considerable size and produced a good deal of discomfort from pressure upon the structures of the neck. It is the first time I have ever seen a fatty tumor in this locality, and for that reason I report the case. Hemorrhage, which would have been considerable, was controlled with clamp forceps. I was assisted in the operation by Drs. Joe Anderson, Beard and Block.

DISCUSSION.

DR. E. R. PALMER: Did the tumor have any effect on the breathing?

DR. W. O. ROBERTS: It had begun to do so.

The essay of the evening was then read by Dr. E. R. Palmer.

CARE OF THE UPPER AIR PASSAGES IN THE
TREATMENT OF SYPHILIS.

Contrary to a quite common belief and mode of procedure, the scientific treatment of syphilis is anything but simple or stereotyped. Attention to what at first seem but little things constitute a very important part of the surgeon's duty. He has a great deal more to do than to simply order two years or more of constitutional treatment with a cessation from tobacco and alcohol. Among the other duties that devolve upon him, are frequent inspection of the nose, mouth and pharynx. The mere casual search for mucous patches in the latter two will not suffice. On taking charge of the case, he should familiarize himself fully with the pre-

syphilitic topography of these parts. In so doing it will be a matter of surprise how frequently their condition is found to be a vicious one. Notably is this the case as regards the mouth. Scurvy, snags, or a general foul and so insanitary condition being frequently present, calling for correction. When possible, each patient, unless the mouth be found in an excellent state, should be sent at once to a competent dentist to have his teeth cleansed, filled, etc., and he should be ordered not only a good dentifrice with a soft brush and pure castile soap for daily use, but from time to time when any specific evidences appear, a mouth wash of listerine, zymocide or the like used, if possible, in full strength.

Enlarged or chronically diseased tonsils should be removed, and chronic non-specific catarrhal conditions of the pharynx being common, these parts must be brought into the best possible conditions by local and constitutional treatment. But of vastly more importance is the care of the nares. It is reprehensible in the extreme to wait until bloody discharges or bits of exfoliating turbinated bone tell the story of probably irreparable damage.

It must not be overlooked that while destructive, and so incurable, phases of syphilis usually attack the nares late in syphilis, they are also usually preceded by early and curable troubles that lay the foundation, when overlooked, for the final damage.

One object I had in calling your attention to this matter to-night is to urge in such cases, both as an exploratory and as a curative measure, the use, with a post-nasal syringe, of a combination in equal parts of Dobell's solution and 15 vol. peroxide of hydrogen. When trouble exists, the discharge of, sometimes, enormous quantities of decomposed muco-pus follows with a great sense of relief and comfort on the part of the patient. Pain is rarely experienced, and where it is, a one per cent. solution of cocaine snuffed from the hollow of the hand suffices for its relief.

While I do not urge this as a *one* remedy in nasal syphilis, I desire to add it as an important combination to the list already recorded. Gummata of the hard palate are usually of a tertiary character. I have recently relieved two such cases without perforation by heroic mercurialization and the application of saturated solution of silver nitrate daily—better results than are obtained usually by the mixed or pure iodide treatment.

A case recently under my care illustrates the necessity of close observation in upper air passage complications. An actress, leading lady of a prominent combination, came to see me with acute aphonia. She was greatly distressed, as she stated a surgeon of Johns Hopkins Hospital had told her her disease was syphilitic in character. She was vehement in her assertions that she had never had syphilis. On examination of her mouth I discovered an enlargement, median of the hard palate, gumma as large as an ordinary grape. I sent her to see Dr. Cheatham, who found no evidence of syphilis in her throat and soon relieved her. I saw her daily for about two weeks as also did Dr. Cheatham, and it was not long before we diagnosed the elevation to be a congenital deformity. The patient has since remained wholly well.

The other doctor diagnosed syphilis, probably, from the supposed gumma, not having made, as I learned, a laryngoscopic examination.

DISCUSSION.

DR. W. O. ROBERTS: In regard to peroxide of hydrogen in the nasal douche, I tried this on two cases and it produced such discomfort that I had to stop it. However, in these cases I used Marchand's peroxide of hydrogen. I have since used the Oakland Company's, which did not produce any of these disagreeable effects. I would like to ask Dr. Palmer if he does not think the douche would answer the same purpose as the post nasal syringe? I rely chiefly in the management of these cases upon constitutional treatment.

DR. E. R. PALMER: The thing is to get them to use it. In cases of early syphilis, I have removed from the nostrils sometimes a double handful of muco-purulent material by throwing the syringe twice full up over the velum palati. I have never seen any inflammatory trouble follow use of the syringe. I use the O.C. peroxide solely.

DR. WM. CHEATHAM: I remember the case Dr. Palmer refers to very well. I did not believe it was a node or gumma. I saw an article a short time afterward where a gentleman reported a lot of these congenital projections.

I think Dr. Palmer's solution of peroxide a little strong; it is liable to be forced into the middle ear and up into the sinuses. I think he will find that a 2 or 3 volume, will do just as much good and is much safer. Another precaution I would like to call Dr. Palmer's attention to, is that of blowing; if you have the patient blow, some of the secretion or solution is very liable to get into the middle ear. Always after using spray, douche or post nasal syringe, let them draw it down instead of blow, thus avoiding danger to the ear.

Dr. Roberts asked about the douche. No anterior treatment reaches more than two-thirds of the nose. Where a solution is used anteriorly, either with spray or douche, it does not reach over the turbinates, but if you use it posteriorly it does. Men write a great deal about syphilis of the upper air passages, I do not think I have but one case now; syphilis shows about one-third the way back in the right nose in this case, which I have relieved by chromic acid. I think it was gumma; had primary lesion four or five years ago. In late syphilis I find cod liver oil very beneficial.

DR. A. M. CARTLEDGE: I suppose my experience is like that of most other physicians; I find some cases recover very promptly under treatment while others are very obstinate. I formerly used nitrate of silver nearly altogether. In the last year or so I have been using gargles or mouth washes of mercury bichloride, using it as part of the treatment. I think bichloride wash, just as a sanitary measure, is a good thing. Many of these cases demand other things than iodide of potassium; as a rule I think we neglect the general building up of these people too much. I believe, in the late manifestations of syphilis, quinine, cinchona, cod liver oil, etc., may be given with excellent results.

DR. E. R. PALMER: I am surprised that Taylor, in his work in Hare's System, objects to the use of the black wash in syphilitic troubles. He says that in private practice it nauseates his patients, but in the Vanderbilt Clinic he gets very fine results from it. I think a great deal of the black wash

and advise its use in suitable cases. It was more to call attention to the matter of mouth hygiene than anything else that I prepared the short paper read this evening.

In the matter of cod liver oil—as most of you know, I taught lung diseases for sixteen years, and I believe that benefit may be derived from the administration of cod liver oil vastly more in late syphilis than in phthisis. I prescribe it nearly every day; there are three or four favorite preparations among the emulsions and I give them, feeling absolutely certain that beneficial results will follow. My faith has very materially weakened in regard to the iodides; I do not get results from them such as I would like or would expect, considering the reputation they have had.

I want to mention two other cases in addition to those referred to in the paper, where I have recently relieved gummata of the hard palate by the administration of three to five grains of proto-iodide daily and daily application of nitrate of silver; both cases were completely cured without any destruction of the bone. One of the patients was a terrible acne subject; had been to Hot Springs twice; he could not take iodide of potassium without its producing very distressing conditions, tumefaction, tormina and all the other disagreeable symptoms. I gave him cod liver oil and he was then able to take the treatment without any trouble.

The next case was double infection. While he was being treated for tertiary syphilis, contracted in 1885, he got a fresh case. While under treatment for this new syphilis, he developed a gumma of the hard palate. He was given four or five grains of proto-iodide daily and, with the application of silver nitrate, got entirely well. I do not give iodide of potassium in conjunction with cod liver oil. I think iodide should be used singly, but my results in its use are not very encouraging except in brain and bone syphilis. In such cases iodide is indicated sometimes to the Hot Springs extreme, 120 grains three times a day or even more will be found very beneficial.

DR. WM. CHEATHAM: I would like to call attention to the fact that in some severe cases of secondary syphilis of the tonsils, pharynx and inside of cheeks, constitutional treatment appears to have but little effect, until the above lesions

are relieved by local treatment. I use in such cases the "black wash" or hydrogen peroxide (Oakland Co.) 10 vol., six ounces; glycerine two ounces; hydrarg. bichloride one grain locally. I do not know how to explain this, but I know it to be a fact.

DR. H. H. GRANT: I would like to ask Dr. Palmer if he uses mercury hypodermatically in the treatment of syphilis.

DR. E. R. PALMER: I have never employed mercury hypodermatically. I think injections might be used simply for their local effect. For instance, some men inject gummata and nodes in the treatment of syphilis with view of getting the local effect of the agent. It has never become a part of the treatment in this country. It is exceedingly painful and has not done the work it was claimed it would do. I think this is the reason why the hypodermatic use of mercury has not become more general. It was claimed that by this means in a three months' course of injection, syphilis could be eradicated from the system. I do not believe this will ever be the case; you must treat your patient over a considerable period of time, no matter what agent you use or the manner of introduction.

DR. H. H. GRANT: Do you not think that the good effect derived from the administration of cod liver oil is owing to its constructive powers, aiding the constitution to avert or overcome the tertiary manifestations, thus rendering iodide unnecessary?

DR. E. R. PALMER: I do not see how we can well explain the wonderful results obtained by the use of cod liver oil. I hardly think it can be explained by the small amount of iodine it contains.

DR. A. M. CARTLEDGE: Do you not think that mercury when applied to the local manifestation of syphilis, has a local specific effect?

DR. E. R. PALMER: Unquestionably it has. The action of mercury is as a solvent of the neoplasm, and this is where I would favor injection, in pronounced lesions, of the gummata to get the local effect of the mercury. The point I wished particularly to emphasize, is the care of the mouth; that it is not sufficient to look into the mouth for mucous patches, etc. You would be surprised at the number of people that present themselves with the most horrible mouths. Scurvy is a very common condition; teeth loose, breath foul, gums

bleeding and all those other conditions that make the mouth look more like a cess-pool than the sweet, clean organ that it should be. Another point I want to emphasize is that the physician should familiarize himself with the presyphilitic topography of the case.

In the case of the actress with the growth in her mouth; if the mouth had been carefully examined previously she would have been familiar with the true nature of the trouble there. She was not even able to tell how long this growth had been present.

In this connection I would like to mention that I saw to-day a lady who had the change of life ten years ago, a wonderfully well-preserved woman, with the two tonsils as large as you will see in very much younger subjects; two immense tonsils almost meeting in the pharynx. I was laboring under the impression that the tonsil atrophied in old patients.

DR. WM. CHEATHAM: Such conditions are not common.

CONTINUED REPORT—(PARTIAL THYROID-ECTOMY).

DR. A. M. VANCE: I would like to make a continued report: At the last meeting of this society I presented a specimen consisting of a portion of thyroid gland removed a few days previously. At that time I read a letter from Dr. Louis Frank, written me after he had made a careful microscopical examination of the growth, in which he pronounced it thyroid gland. You will remember at that time there was some doubt expressed by one or two members as to the nature of the tumor, that is whether it was really thyroid tissue. I have since had it examined by several other microscopists and they all agree with the report made by Dr. Frank. I will read their several letters, also a short report from the *New York Medical Journal*, and a quotation from the *American Text Book of Surgery*, bearing on the question.

"PARATHYROID GLANDS IN MAN."

"At a meeting of the Paris Medical Society of the Hospitals, held on March 17th, reported in the *Union Medicale* for March 21st, Dr. Chantemesse and Dr. Marie described some little glandular organs found in the neighborhood of the thyroid gland in man, and confirmed Sanderström's description of parathyroid glands. They form two groups, one of

which, the more important, is situated at the level of the point of penetration of the inferior thyroid artery. This group consists of two or three glandules, none of them larger than a lentil, round, ovoid, or kidney shaped. The other group, generally less voluminous, is at the level of the point of penetration of the superior thyroid artery. These little glands are free or surrounded with connective tissue and provided with a minute vascular pedicle. Their structure is very different from that of lymphatic ganglia. They are divided into lobules by a connective tissue stroma, and are traversed by numerous capillary vessels. The lobules are formed of little cells sometimes disposed irregularly, sometimes arranged in a circle, the periphery of which is bordered with little cubical cells, and the centre filled with irregularly disposed elements. Occasionally, true tubes of epithelial cells may be made out, and at the periphery of the glands there are often to be seen little rounded masses, the central part of which contains a material having a colloid appearance. Stress was laid on the fact that these glandules were situated externally to the capsule of the thyroid gland, and it was urged that they be left in cases of thyroidectomy, for they were capable of a compensatory function analogous to that of the pituitary gland."—(*N. Y. Medical Journal*, April 15th, 1893.)

"The body is quite likely to be accompanied by accessory masses of similar tissue, which may be connected with it or may lie behind the trachea, or beneath the base of the tongue, or elsewhere about the middle or anterior portions."—(*The American Text Book of Surgery*.)

"DR. A. M. VANCE: I agree with Dr. Frank's statement, having made a microscopic examination of tissue and would like to add that I believe it to be not only thyroid gland tissue but a goitre."

DR. WM. VISSMAN."

"MY DEAR DOCTOR VANCE: "I was requested by Dr. Rodman to examine a piece of tissue unaccompanied by clinical history, etc. I did so and after examining ten or twelve sections reported it as thyroid tissue. I presume this is the same tissue examined by Drs. Frank and Vissman and if so, I concur in their diagnosis."

Respt.

H. M. GOODMAN, M. D."

"MY DEAR DOCTOR VANCE: "At the request of Dr. Goodman, I examined a section of the tissues above described, and found it to present all the characteristics of thyroid tissue."

Yours very truly,

H. A. COTTELL, M. D."

"DEAR DOCTOR VANCE: "Macroscopically and microscopically I think the tissue sent me by you to be a thyroid gland."

Respt.

JNO. L. HOWARD, M. D."

"DEAR DOCTOR: Just coming home I found your note requesting me to give you my statement in regard to the specimen examined for Dr. Rodman and I gladly do so, as I have done at the time to him. The piece of tissue handed to me by Dr. Rodman was partly dried at the outer surface and consisted of two sorts of tissue to the naked eye, one grayish and glistening, the other a small nodule at the periphery, a yellowish white firmer tissue.

Microscopic examination shows the tissue to be made up of gland-acini, varying in size from $\frac{1}{16}$ to $\frac{1}{8}$ inch, irregular in outline, separated from one another by a delicate fibrous wall, and lined with roundish nucleated cells somewhat larger than the ordinary lymph corpuscles. In some of the larger acini, the lining cells are flattened by compression of a clear homogenous refractive substance filling the acini (colloid material), some few of the acini are filled with an organized tissue made up of a delicate connective tissue, some others have a yellowish brown pigment lying within the colloid material.

The mentioned yellowish white portion is made up of densely packed alveoli which are filled partly with colloid material but the majority with densely crowded cells of the same type as those lining the wall. The stroma is supplied with a moderate amount of small blood vessels.

As to "the resume"—I have not the least hesitation or the slightest doubt to state, as I have done to my friend Dr. Rodman, that the specimen in question is a piece of thyroid gland in a state of (very common in this structure) colloid degeneration, or as you find it named by German pathologists Struma Colloides.

Hoping to have served you by this report"

I am sincerely your friend,

C. WEIDNER."

Dr. Frank has made several sections of the growth, which I have had him bring here this evening and would be glad to have you examine them through the microscope, also compare them with other specimens of thyroid tissue.

DR. W. L. RODMAN: I wish to add a word in regard to Dr. Weidner's opinion: Dr. Vance was kind enough to give me a portion of the specimen; I had it in my buggy and in driving down town met Dr. Weidner, who said he would be very glad to examine it. He made an examination and made the same report to me verbally that he has in writing to Dr. Vance. I take pleasure in stating that Dr. Weidner further said he was not certain, but the point in the section he made there seemed to be cells of a sarcomatous nature. I do not mean to quote the doctor as saying that it was necessarily sarcomatous degeneration of the thyroid, but he found cells looking very much like sarcoma cells. I stated at the last meeting that if this was thyroid tissue, I was satisfied that it was an accessory thyroid that occurs occasionally at different points in the neck, sometimes inside the larynx and trachea, and when they do occur, they are subject to the same enlargements as the thyroid-cystic degeneration and fibrous bronchocele.

From the unanimity of the report made by the microscopists, I am satisfied that this must be thyroid tissue. I am still under the impression, however, that it is an enlarged accessory thyroid, as the isthmus is very infrequently the seat of goitre, it nearly always affecting one of the two lobes, preferably the right. Hypertrophy of the isthmus is very infrequent. In a paper that I am now preparing, which will be read at the next meeting of the Kentucky State Medical Society next Thursday morning, I take up diseases of the thyroid as well as other tumors of the neck. I have gone over the literature very carefully, and am, therefore, in position to speak advisedly upon the subject. Benign solid growths practically do not affect the thyroid gland, the only one being the fibrous bronchocele or hypertrophy of the gland. Cystic degeneration is frequent. As to malignant growths: Kaufman, in an elaborate paper on the subject, was able to collect only 21 cases of carcinoma affecting the thyroid, and 7 cases of sarcoma. So I think I was right

in stating that benign growths of the thyroid are practically unknown, and that malignant growths are very rarely found, so rarely that I doubt if any member present has ever seen one.

DR. LOUIS FRANK (Visiting): I was asked by Dr. Vance to bring some sections (of the specimen handed me by him) here to-night to demonstrate the correctness of my diagnosis. His report from the other microscopists of the city was entirely unsolicited by me. I intend to stand on the report I have already made. Some one has mentioned the short time consumed by me in making an examination of this tumor. I will state that, as the specimen was fresh, no time was required further than to make a few sections of the growth and mount them for examination, probably ten or fifteen minutes.

Possibly I misunderstood Dr. Rodman in saying that non-malignant growths of the thyroid were very infrequent; from my reading (and I have looked over two or three books on pathology since this tumor was sent to me), I find that cystic growths of the thyroid, what we ordinarily term struma, are quite common. I agree with Dr. Rodman that malignant growths of the thyroid are very rare, comparatively few cases being on record. Benign growths, though, are very frequent, being either of the cystic variety or being fibroid in character; the latter variety being usually a result of changes following hemorrhage of the cystic tumors.

DR. H. M. GOODMAN (Visiting): I have very little to add to the foregoing remarks, except to define my position in connection with the examination of the specimen. I worked under very adverse circumstances. I knew nothing about the case; a piece of tissue being handed me by one of my colleagues at the University with the request that I examine and report upon it. I remarked at the time that it was a very difficult thing to do in the absence of any clinical history, but as the tissue seemed to be tolerably hard and firm I immediately embedded it in colloidin, and made a few sections and proceeded to examine it. The first section showed thyroid tissue with increasing amount of colloid material in the sacs of the tissue. I am glad, for once, the microscopists of the city seem to be agreed, and certainly I think the diagnosis is absolutely settled. I will add, however,

that in sending the report to Dr. Rodman, I made the diagnosis of colloid struma.

DR. LOUIS FRANK: I would also like to say that it is only by microscopical examination that we are able to recognize certain tissue macroscopically. It is the microscope that renders us able to know certain tissues, and that has by analyzing structures enabled us to say what they are when we next see them. Were it not for the microscope we would never be able to recognize carcinoma or any other growths macroscopically.

Concerning the point made by Dr. Goodman in regard to the clinical history: The specimen was handed to me with no history whatever, except that the tumor was removed from the neck, consequently the question of clinical history did not figure in my diagnosis. You cannot always rely upon the clinical history for diagnosis.

RIB RESECTION FOR EMPYEMA.

DR. W. O. ROBERTS: I will report a case I operated upon at the University Clinic last Tuesday morning. A man, thirty-five years of age, sixteen years ago had what was said to be pneumonia of the right side; had never been well since. Five years ago, a large swelling appeared just above the edge of the cartilage on the right side and it was finally opened, discharging very profusely and has been discharging freely every since. Upon examination, I found the left side of the chest enlarged and the right side perfectly flat and dull clear up to the point of the scapula. I made an incision down to the seventh rib on a line with the posterior diameter of the axillary space, found the ribs so close together that I could not get anything between them. I then resected a portion of the seventh rib, removing a piece probably about two inches in length. I then opened the chest and I think the foulest pus that I have ever smelled in my life came out. There must have been at least a pint of it, if not more. I inserted a large drainage tube without washing out the chest, emptying it as thoroughly as I could by changing the position of the patient, and sent him to the Sts. Mary and Elizabeth Hospital. He has gotten along without an untoward symptom and now the original opening is almost entirely closed. Nothing comes out of it.

I report the case as being of interest because of the fact that this condition of empyema has lasted such a length of time. He dates it back sixteen years; has never been able to breath well on that side since the attack of pneumonia.

DISCUSSION.

DR. A. M. VANCE: I would like to ask Dr. Roberts why he did not wash out the chest?

DR. W. O. ROBERTS: Because of the fact that a number of sudden deaths have resulted from washing out the sac in cases of pyema, especially cases where the empyema was on the left side.

DR. A. M. CARTLEDGE: I hope a continued report will be made of this case, I do not think the man will get well. A lung compressed by an accumulation of pus for sixteen years will not get well as a rule with the resection of $1\frac{1}{2}$ to 2 inches of rib. The case is of such long standing, there is evidently a quantity of old fibrous tissue existing, and I do not believe there will be sufficient lung expansion to fill the cavity. I think there will be a discharging sinus requiring a more extensive operation. That has been my experience. The lung will not expand, and you will have to take out a section of two or three ribs, and break up adhesions that bind the lung down

DR. W. O. ROBERTS: This is the second case I have had where this offensive pus existed; both of them were operated upon at the University Clinic. The first case was several years ago. The man had been shot, the ball entering the upper part of the right side of the chest, between the third and fourth ribs, and had been discharging for something over a year; whenever he would lie down the pus would run out through the opening. I removed a section of the seventh rib and such offensive pus escaped that almost all the students left the lecture room. Referring to what Dr. Cartledge has said about the case just reported: I made the same remark at the time of the operation. However, I thought it was best to try it with the resection of one rib, and if I failed to get closure, then do the operation he refers to.

I saw in Edinburgh, in 1886, a case that had been operated upon by Annandale for empyema which had existed for years, and it seemed to me that he removed

the greater part of one side of the thorax. He made an incision very low down and removed fully four inches of the tenth rib, a little less of the next and so on until the apex reached about the third rib. He told me he had operated on several cases in that way and had gotten excellent results.

DR. A. M. CARTLEDGE: Do you not think the odor, where the empyema has been the result of original pneumonia, is because of the fact that air has been introduced from the lung? I have seen several cases of this kind.

DR. W. O. ROBERTS: I am satisfied that there was communication with the lung in this case. Before the operation this man expectorated large quantities of pus that looked tuberculous in character. I am very sorry that I did not have a microscopical examination made of it before this meeting. Since operation, expectoration has diminished very much.

One peculiarity about this patient is that he has the most marked "club fingers" that I ever saw.

EMPYEMA—RESECTION OF RIB WITHOUT ANÆSTHESIA.

DR. A. M. VANCE: I would like to mention a case of empyema that I saw the other day. I was called by Drs. Rudell and Evans to see a little boy who had been sick for five weeks, beginning with pneumonia and ending up with what was supposed to be pleurisy of large proportions. He remained on his right side with the arm extended above his head; had been in this condition for about two weeks and unable to breathe comfortably in any other position. He was unable to turn over and all the windows had to be kept open in order that he might get sufficient air. We first gave him some whiskey and a hypodermic injection of nitro-glycerine, which improved his forces a little, and I found the whole right lung dull. I inserted an aspirator needle and drew off about an ounce of pus, then the needle became obstructed. I then determined to open the chest without any anæsthesia. I made an incision fully three inches long and inserted two large size drainage tubes; about a gallon of pus escaped, much of it being caseous in nature. As soon as about half of the pus was removed, the boy became very cheery and seemed much better.

The point of interest in the case is that the prolonged pressure seemed to have produced complete anæsthesia of the whole side. I would have washed out the cavity, had it not been for the fact that the boy was so much exhausted that I could not.

DISCUSSION.

DR. A. M. CARTLEDGE: I do not think we are justified in taking the additional risk in washing out the chest in these cases. In the first place, you have a large purulent sac that cannot be thoroughly cleansed by irrigation, and I think the attempt is attended with danger. If it were possible to render this whole surface aseptic, then we might afford to take the additional risk. No matter how thoroughly you empty an empyema sac, when the dressings are changed you will find them saturated with pus. I believe the best plan is to introduce the shortest drainage tube that will reach the cavity, not attempting to get to the bottom, then apply an antiseptic dressing and let the drainage take care of itself. In my opinion we will shortly have an entirely new pathology of empyema. Pleuritic effusion becoming purulent, simply means the introduction of infection through the lung; that most of these cases of pleuritic effusion follow as a result of pneumonia is beyond question. It is a well known fact that in the tuberculous variety, no matter what means of drainage you employ, the patient usually dies.

Don't Pick them Green.

Statistics are said to show that young men do not, on the average, attain full physical maturity until they arrive at the age of twenty-eight years. Prof. Scheiller, of Harvard, asserts, as a result of his observations, that young men do not attain to the full measure of their mental faculties before twenty-five years of age. Better say thirty. A shrewd observer has said that "most men are boys until they are thirty, and little boys until they are twenty-five"; and this accords with the standard of manhood which was fixed at thirty among the ancient Hebrews and other races. A remedy is needed for the progress and propagation of puerility.—*Exchange.*

It is hard to feel at home with people who never make mistakes.

DR. KLEIN, the distinguished lecturer on physiology at St. Bartholomew's, has announced that science is enriched by a medical discovery as important in the domain of therapeutics as chloroform, laudanum and quinine. The great theory of infection by bacillus forms requires, in order to be fruitful of benefits to mankind, the discovery of a powerful germicide. In carbolic acid, in corrosive sublimate and in potassium permanganate, science has made long strides in the direction of adequate antiseptics and bacillicides, but these drugs all have their drawbacks. Now, however, Mr. Worrall, a noted scientist, claims to have found among the coal products a disinfecting body apparently superior to all previous ones. He has named it izal, and Dr. Klein, after a series of exhaustive laboratory experiments, is said to have found it absolutely destructive of the spores of some of the most intractable and malignant diseases. Unlike most powerful disinfectants, it is non-poisonous to human beings, and may be taken internally, diluted. Dr. Klein's experiments go to prove that, diluted with 200 parts of water, izal absolutely destroys the vitality of the microbes of diphtheria, scarlatina, glanders, erysipelas, typhoid and cholera. *Black and White*, in speaking of the discovery, says: "It is not too much to say that izal, unless the conclusions of one of the most competent of our physiologists are erroneous, is the most important discovery in practical therapeutics made during the present generation."

An Addition to Therapeutics.

Mrs. Selby—"Doctah, the chile dun gone 'swaller'r pint ob ink."

Doctor—"Hab yo' dun ennyding fo' de relief ob 'im?"

Mrs. Selby—"I'se dun made 'im eat free sheets of blottin' paper, doctah. Was dat rite?"

THEY had asked Dr. Sandblast, the eminent surgeon, to carve the festal fowl, and he stood over it with the carving knife delicately held in the first position. "The incision, you will observe, gentlemen," he began dreamily, "commences a little to the left of the median line, and—oh, excuse me, Mrs. Parmalee, I thought I was in the—*may* I help you to a little of the femur?"—*Puck.*

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SATURDAY, JULY 22ND, 1893.

EDITORIAL.

TETANUS; ITS CAUSE AND CURE.

In 1884, Nicolaire (*Deutsche Medical Wochenschrift*, No. 42, 1884), produced tetanus in certain of the lower animals by inoculating them with garden earth. He also showed that the disease could be transmitted to other animals by inoculating them subcutaneously with the pus from the infected animal. Later it was shown by Carl and Rattone that it was an infectious disease, and could be transmitted from man to animals by inoculation. The bacillus was isolated and obtained in pure culture by Kitasato in 1889. Tetanus has been produced by a large number of investigators by inoculating animals with garden or field soil. So numerous have been the cases of tetanus in man from injury, and the test inoculation of guinea pigs with soil, that the bacillus is now known to be very widely distributed in nature.

Morphologically, the bacillus of tetanus is an exceedingly interesting germ. It is a slender rod-shaped germ with one end rounded and the other usually much en-

larged, and containing a spore. The spore appears at the end in the form of a little sphere, giving the bacillus the appearance of a short pin. The bacilli are from two to three micromillimeters in length. They stain with the aniline dyes usually employed in staining bacteria, and they retain their coloring matter when treated after the Gram method. They are motile.

The bacillus of tetanus does not grow in an atmosphere containing oxygen. In anaerobic cultures it develops at the room temperature, but grows best at a temperature of about 36°C. It liquifies gelatine and solidifies blood serum. In an atmosphere of hydrogen it grows very rapidly in alkaline bouillon and in gelatine. The addition of glucose to the culture medium increases the rapidity of the growth. The spores of tetanus bacilli retain their vitality for several weeks in a desiccated condition. They also resist a temperature of 80°C. maintained for an hour. They are rapidly destroyed by boiling. Experiments have shown that

when animals are inoculated with tetanus bacilli, either in pure culture or otherwise, that the bacilli remain at the seat of inoculation and that death results from the action of poisonous substances elaborated by the growth of the bacteria in their place of injection. Kitasato has shown that cultures of the tetanus bacilli that were filtered through porcelain, which removed all of the bacilli, would produce the disease; *i. e.*, symptoms and death. The result of certain European investigators show that this germ does not become attenuated by artificial cultivations. Biegor, Fraenkel and Kitasato have isolated a toxalbumin from cultures of the tetanus bacillus, which is very fatal. Much work has been successfully done in producing immunity in mice and guinea pigs against tetanus.

With the better knowledge of the disease has come a better method of dealing with it, and we now have authentic reports of the healing of traumatic tetanus by the use of the antitoxin of tetanus, prepared by Lizzoni and Cattani.

Schwarz (*Centralblatt f. Bakteriologie*, X. 1891), reports a case of traumatic tetanus that was cured by the use of subcutaneous injections of an emulsion of antitoxin, prepared from the blood of a dog that was immune to the disease. A boy of fifteen years was injured August 20th. Early in September he showed symptoms of tetanus, and September 17th was taken to a hospital. He exhibited every symptom of tetanus. September 18th, he received 15 grams of antitoxin; it was ground up in 3cc. of water and injected. September 19th, the injection was repeated in the morning and in the afternoon a second injection of 2 grams. September 20th, a marked improvement in the symptoms, in the afternoon 0.25 gram injected. September 21st, still further improvement, injection repeated. September 22nd, patient continued to improve; no injection. September 23rd,

nearly recovered; the tetanus symptoms entirely gone. October 1st, the patient had fully recovered and was dismissed from the hospital. After each injection there was a depression in the temperature and after that a certain amount of perspiration.

* Pacissi (*La Reforma Medica*, No. 4, 1892), reports a successful treatment of tetanus with the antitoxin (prepared from the serum of an immunized dog). After eight injections of the antitoxin the symptoms were relieved.

Several other cases of similar success in the use of this substance are reported, but they all tend to the opinion that the substance is practical and could be used with advantage in all cases of traumatic tetanus. The preparation of the antitoxin requires a certain amount of care and knowledge of chemistry and bacteriology. The results that are being obtained with this and other substances, prepared either from cultures of bacteria or the blood of immunized animals, suggest the importance of state boards of health equipping themselves with a laboratory and bacteriologist competent to prepare these substances for the needs of the physicians within their jurisdiction.

An Excellant Label Paste.

The *Nat. Dr.* claims, is:

R Potato starch 1 part.
Water 3 to 4 parts.
Solution of caustic soda enough to gelatinize.

It is said this will not sour.

For Laryngeal Phthisis.

L'Union Medicale (in *Therap. Gaz.*) suggests the following:

R Iodoform gr. lxxv
Calcis phosphat pulv 5 iiss
Acid boric. pulv. 5 j
Menthol gr. v

M. Sig. Insufflate, morning and night, a sufficient amount into the larynx. For relief of difficulty in swallowing, or the irritation which may be present, it is well to use a swab wet with a solution of cocaine.

— *Ex.*

LOCAL ANÆSTHESIA may be readily produced in about a minute by a spray of menthol, p. j; chloroform, p. xv; and will last from two or six minutes.

TRANSLATIONS.

CLASSIFICATION OF ARTERITIS.†

Circumscribed arteritis, according to Lancereaux (*Le. Bull Méd.*, March 29, 1893), has for its principal characteristic the circumscription of the arterial lesion, its localization to a vessel of medium caliber, its termination by obliteration or by aneurismal dilatation. It comprises three distinct varieties, syphilitic arteritis, tubercular arteritis, and embolic arteritis. The first two varieties, due to a general infection of the organism, are perfectly defined; the third, produced by the action of a foreign body, is no less clear, notwithstanding its varied origin, in its manifestations and its evolution.

Syphilitic arteritis is localized to the arteries supplied with lymphatic glands, and particularly to the cerebro-spinal arteries; whilst the other vessels and notably the large arteries, as the aorta and its principal branches, are slightly or not at all exposed. Several authors, however, have described syphilitic lesions of the large vessels. Weber reports that he has seen tumors of considerable size developed in the thickness of the middle tunic of the pulmonary artery together with gummy tumors upon the skull and in the liver. The circumscription of this lesion favors syphilis, but it is necessary to investigate further its evolution in order to positively admit its specific origin. In a case reported by Virchow, that of a young syphilitic girl afflicted with interstitial nephritis and whose aorta was garnished with sclerotic plaques, Lancereaux does not hesitate to recognize, in spite of the age of the patient, the existence of ordinary atheroma. He finds the proof of this in the multiplicity of the lesions of the aorta and in the nephritis which accompanies them. Most of the other cases of alteration, or of aneurism of the aorta attributed to syphilis, have no more value than the preceding, because they are not based upon the proper characteristics and a special evolution, but only upon the false adage: *post hoc propter hoc*, if not upon the amelioration of the phenomena of aneurism subsequent to specific

treatment, as if this treatment could repair a destruction of the arterial wall. Lancereaux believes that a certain number of these cases have a malarial origin. The frequency of alterations and aneurism of the large vessels, in the British Army and Navy, has for a long time attracted the attention of the English military surgeon. Welch concludes wrongly that this affection is due to syphilis. It should be remembered that the frequency of this affection is relatively larger among the colonial troops who are much exposed to a malarial infection, and Lancereaux is led to believe that the frequency of aneurism in the English army is due neither to syphilis nor to alcoholism, but rather to paludism, a disease equally as common among the troops and which has a tendency to produce a special aortitis.

The influence of syphilis upon the arteries, especially those of the cerebro-spinal centres is incontestable, these vessels, are in truth, the seat of predilection of the action of the syphilitic virus, and the reason of this lies in the lymphatic glands that surround them, for it is known that the lymphatic system is the avenue of the development of the manifestations of constitutional syphilis. The lymphatic becomes enlarged and pressing externally and internally upon the middle coat of the artery, the latter atrophies, and the blood, pressing upon the thinned wall, produces a simple dilatation or a true aneurismal tumor. In the other cases, the syphilitic arteritis produces a narrowing or even an obliteration of the caliber. These are followed, in either case, by an ischemia more or less complete, and often a rupture of the vessel.

Tubercular arteritis is relatively rare, but it likewise tends to become localized in the arteries of small and middle size and especially in those that possess a lymphatic adventitia, as the lymphatic medium is necessary to the development of the cerebral arteries. It shows a special predilection for the cerebral arteries and especially for the branches of the pulmonary arteries. Histologically, it consists in an infiltration of the arterial

† Translated for THE MEDICAL AND SURGICAL REPORTER by W. A. N. Dorland, M. D.

tissues with granulation tissue. The external tunic, the beginning point of the process, is filled with round cells (embryonal cells), forming islets more or less voluminous, which invade the normal tissue little by little and in which may be found the so-called giant cells. This tissue degeneration becomes necrotic and ulcerous, and thus eventually dilatation or aneurismal tumors are formed. This terminates by obliteration, aneurismal dilatation or by rupture. The aneurisms in the lung are usually found in cavities, are single or multiple, and may be mixed, saculated or varicose, in their

nature. Tubercular arteritis is an insidious condition and one difficult to diagnose.

Embotic arteritis has for its usual seat the branches of the pulmonary arteries and the cerebral arteries. The foreign body is surrounded by a development of embryonal cells due to the inflammation produced, a fibrinous clot forms and the calibre becomes obliterated by inflammatory action. The tunica intima takes on a vegetation and produces an endothelial bed and this tends to produce the obliteration, which is the most common termination. At other times ulceration occurs and aneurismal tumors are formed.

APPENDICITIS AND ITS COMPLICATIONS FROM A SURGICAL STANDPOINT.*

The author, Dr. G. Lennander (*Upsala Läkarefören Forhandl.*, bd. xxviii, Hft. 1.), reports 34 operative cases, which were operated upon by him and his assistants between the fall of 1888 and summer of 1892. There was but one death, which took place 5 weeks after the operation, caused by pyæmia, a small gangrenous portion of the intestines having been overlooked during the operation. In 3 cases, laparotomy with extirpation of the vermiform appendix was performed, in which diffuse peritonitis existed.

In 3 other patients, suffering from appendicitis, there were found 2 or more incapsulated intra-peritoneal abscesses, which were opened and drained; in only 2 of these was it possible to remove the vermiform appendix; of these 3 it was found necessary to make incisions through the vaginal vault and the colon.

In 12 cases, abscesses were found in the iliac fossa and in the lumbar region, and opened at those places; 3 times extirpation of the appendix; of the 9 remaining, 3 have had returns and there was 1 death, which has been reported at the beginning.

In 7 cases laparotomy and amputation of the ulcerated or gangrenous appendix; operation 40 to 60 hours after the beginning of the attack with the exception of 2, in which the attacks had lasted four days in one, and in the other nine days. Pelvic abscesses were present in 3 cases, 1

having discharged through the vagina and 2 through the large intestine. Amputation of the vermiform appendix was performed five times during the free intervals. Chronic appendicitis was diagnosed in one case, and operation revealed an abscess of the appendix, while the adhesions between the ileum and the anterior wall of the abdomen were dense; these were released during the operation.

As far as the author has been able to follow his cases, the patients are all well; three still remaining under observation. During this time two patients who refused operation died of gangrenous appendicitis; one had an inoperable carcinoma at the head of the colon and the other was supposed to be suffering from a perforating ulcer of the stomach, this presumably giving rise to the existing peritonitis. Etiologically, the author speaks first of foreign bodies or fecal calculi; the latter, according to his idea, forming in the appendix (not in the cæcum as Talamon teaches); further, he believes in the possibility of a retention of the secretions, aided by the swelling of the mucous membrane, and particularly assisted by a bend or constriction of the bowel.

The author has observed this in one case in which he operated, and later was able to palpate it in two cases before the operation. The primary stercoral typhilitis was observed by the author in several cases and he is therefore inclined to take the

*Translated for THE MEDICAL AND SURGICAL REPORTER by Marie B. Werner, M. D.

opposite view of Sahli. Severe repeated attacks of appendicitis, in which the pathological changes have been entirely confined to the vermiform process, and suppurative peritonitis, in which there were only catarrhal changes in an unperforated vermiform appendix, were also seen by the author. Lennander prefers the rectal and vaginal examination. He has, in several cases, found the difference in temperature above the normal between the axillary and the rectal methods, which Madelung has found to be pathognomonic of suppuration in the lower portion of the abdomen or the pelvis.

L. does not operate during the interval between the attacks, only at the express wish of the patient. He then opens down, releases all the adhesions which seem, to him, to be of pathological origin, and then invaginates the stump into the cæcum. If diffuse peritonitis is present, a section is unavoidable, indeed strictly indicated. If the pus formed has become encapsulated, he tries, if possible, to avoid opening into the free abdominal cavity and prefers to drain, and, with the aid of antiseptics, feels certain that this method is less dangerous than to allow an unopened, undrained pus pocket to remain in the pelvic cavity.

His incisions are usually in the median line or laterally. If the latter, he directs his incision along the motor nerves, in order to avoid hernia. During the operation, the author uses a warm solution of sodium chloride (sometimes 20 to 30 litres). If at all possible, the appendix is removed, and generally no intestinal suture is made, but he closes the opening by the application of Pean's forceps, which are left in the wound; drainage of iodoform gauze is used between the loops of small intestines, Keith's glass drain is also placed. The accumulative fluid is aspirated during the 24 hours, once in 3 hours or oftener if necessary.

Narcosis, at first chlorform by drops and later ether. The after treatment consist in small doses of morphia for the existing pain. To avoid symptoms of ileus, the stomach and intestines are washed out; nourishment is given as early as possible and in rapidly increasing doses. If necessary, warm enemata (500 to 600 dr.) are given to check the thirst, once or twice daily.

The continuance of even slight symptoms of ileus is an indication, to the mind of the author, of more abscesses or of fecal accumulations. As a rational treatment in cases of relapses of perityphlitis, L. recommends careful massage, but only in the Doctor's hand; this may also be the best method by which he will be able to gain thorough knowledge of the anatomical conditions present.—*Centralb. fur Chir.*, 1893.

The Effect of Smoking Tobacco on Boys.*

Among 32 school boys, who were examined by Decaisne, between the ages of 9 and 15, of whom all smoked, he found that 22 suffered from disturbances of the circulation, of digestion, mental relaxation and decided taste for alcoholic liquors; 8 of these were suffering from anæmia and from intermittent pulse.—*Der Kinder-Arzt* 1893.

A Glasgow physician is the defendant in a curious breach of promise case. His courtship was progressing smoothly enough until his *fiancee* requested his services for treatment of fistula. The trouble was of tuberculous origin. He treated the case, but lost his affection for the fair but unfortunate patient. Perhaps if he loses his case, he can offset the damages by a bill for professional services.

PROF. KEEN says a good point to bear in mind in diagnosing a case of *Chancere* is that you will never find chancres on the walls of the vagina, as they always appear on its outlet.

PROF. HARE says the iodide of potassium will be found to be best adapted, not to the acute stages of rheumatism, in which in the joints are generally very hot and painful, but to the sub-acute stages, in which the joints are swollen and the return to the normal condition seems to be very slow.

WE are generally so carried away by the last words of famous personages, that we never pause to reflect that the first words of these same heroes were "goo, goo, goo!"—*Puck*.

*Translated for THE MEDICAL AND SURGICAL REPORTER by Marie B. Werner, M. D.

ABSTRACTS.

MEASUREMENTS OF THE LIVER AT DIFFERENT AGES.

Little has been written on the normal measurements of the liver and their pathological variations during infant life.

The clinical measurements are relatively easy to make and to practicing physicians are of more importance than a knowledge of the various diameters and the weights.

These last can never serve as a means of comparison between the conditions of health, of functional derangement and of serious pathological changes. It is not possible clinically to determine the absolute dimensions of the liver, because of its being surrounded by resonant viscera—the lungs and intestines. Clinical measurements are, however, of value if they show a regular progression according to age, their variations depending simply on passing troubles of digestion. The author quotes from Vogel, of Dorpat, and gives the description of clinical examinations which he has adopted.

Physical examination of the liver is made in children exactly as in adults. Percussion in the axillary and mammary lines determines the measurements of the right lobe, and percussion in the vertical line through the sternum that of the left. Restlessness in little children makes this determination difficult. We generally cannot establish the influence of respiration on these measurements before the age of three years. The mammary and axillary lines are the only ones upon which Douchez believes percussion to be of practical use. He has often, in cases of considerable hypertrophy of the liver, failed to find any evidence of increase in its posterior face by means of percussion on a vertical line drawn through the scapula. He believes that there are three causes of error in examination that are of especial hindrance in children. They are excessive resonance of the thorax, resistance of the abdominal muscles, and distension of the stomach and intestines by gas. The greatest source of error is the extreme resonance of the thorax, especially in the newly-born.

In spite of care, measurements on the living are commonly a little less than on the dead. This statement the author

proves by a table showing the results of many observations. Nevertheless, although giving less liver dulness than similar examinations after death, these results in the living represent really the impression given to the finger and ear; and the error, if it be one, is reproduced uniformly and proportionately at all times.

In certain cases, indeed, the demarcation of the upper and lower borders of the liver by percussion may leave doubt in the mind, and it is then well to verify by palpation. When the lower border extends abnormally low, palpation immediately below the false ribs encounters a certain resistance provided the child will relax his muscles. If, on the contrary, he holds himself tense, the finger meets with resistance at any rate; and it is well to repeat the observations several times in the same place.

Percussion serves better than palpation to define the slender edge of the liver, which is easily displaced. This thin edge of the liver may be resonant to percussion on account of its thinness and its relations with the intestine; and this occurs even after the abdomen has been opened. The child is best examined on his left side, the arm being raised, the hand grasping the bed and the left flank supported on a pillow. Percussion should be made on both the mammary and axillary lines; the two observations serving as a control upon each other, for the upper line of dulness is practically on the same horizontal plane in both of them.

In order to best show the relation of measurements, the writer has grouped his observations into three classes:

1. Measurements on the cadaver before and after opening the subject.
2. Measurements on the liver of the living in health.
3. Measurements of the liver of the living in disease.

The author presents a table of 88 observations. He finds that in the greater number of infectious diseases, including even measles and diphtheria, it is not uncommon to find enlargement of the liver, due probably to incomplete elimination of

the poison. His conclusions are as follows :

1. The exact determination of the borders of the liver in children is difficult, because of the involuntary contraction of the muscles, also on account of the resonance found over the thin lower edge and of the oblique position of the upper border.

2. The measure of dulness of the anterior face of the liver, in the living, is almost always less by one or two centimeters than the real measure on the cadaver, either before or after opening the abdomen; we should therefore estimate this dulness from its extreme limits in order to reach as nearly as possible to the truth.

3. The upper border of the liver corresponds in general to the interval between the fifth and sixth ribs.

4. In the healthy state, the vertical measurements increase almost regularly

with each year's growth, excepting in certain individuals.

5. This appreciable growth between the second and ninth years ceases almost entirely by the twelfth year and can be measured in centimetres by adding one, two or three centimetres, an additional centimetre for every year of the child's life up to eight years exclusive. Beyond eight or nine years the liver dulness measures approximately nearly, but not quite, one centimetre for each year of the child's life.

6. The liver was found *somewhat large* in cases of catarrhal jaundice and gastric disturbance; *large* in cardiac disease, *very large* with amyloid liver, syphilitic liver, fatty liver and hydatid cysts.

7. The slightest disturbance of health may cause a variation of two to four centimeters, and a variation of three to ten centimetres was found with certain grave lesions.—*Douchez: Revue Mensuelle.*

ARTIFICIAL DIAMONDS.

Mr. Torald Sollmann, a registered pharmacist of Ohio, for the present residing in Paris for the purpose of the pursuit of special branches of study, writes home to friends a very interesting account of some experiments and demonstrations in the manufacture of artificial diamonds, which we are kindly allowed to reproduce. He says:

"Yesterday I saw the biggest thing here yet. One of the fellows at the laboratory gave me an entry ticket to a lecture on diamonds by Prof. Moisson, of the School of Pharmacy. Several months ago, he first succeeded in making artificial ones, the first real diamonds ever made; former ones all turned out to be quartz. The lecture lasted an hour, and it took place in the big amphitheater of the Arts and Metiers Building. There was not a vacant space in the room, even the stairs were occupied. The lecture was illustrated by experiments which were the most interesting part, something I don't suppose I will ever see again. The professor started out by saying that the diamond and the other forms of carbon were chemically identical. To prove it, he burned some lampblack in a tube through

which a current of oxygen was passing, and conducted the carbonic acid into limewater. Then he burned a diamond. It was done in a platinum tube heated by a Bunsen burner, in a current of oxygen, the carbonic acid being also conducted into limewater. The image of the interior of the tube was thrown on a screen, by means of a stereopticon, and we could see the little diamond gradually disappear. Then he further proved the identity of diamond and graphite by placing a diamond in the electric arc, when it was changed into graphite. Then he told us the difference between the various forms of carbon, that it depended upon the molecules combining among themselves. The diamond crystalizes in octohedra, the graphite in hexagons, the other forms are amorphous; the diamond scratches the ruby and can, when in fine powder, be separated from graphite by a liquid of the specific gravity of 2.3, in which the latter floats, whilst the former sinks. This he also illustrated. Then he came back to his subject proper. When he took up the subject of producing the diamond artificially, he started in by studying the earth in which it was naturally formed. He

found that all the earth, wherever found, contained a large amount of iron. Here he exhibited a piece of diamond-bearing clay from the Cape. Then he gave an account of his experiments. He brought a mixture of carbon and iron to an intense heat. Here he described the furnace he employed and showed it. It produces a heat of 3500°C. (6300°F.) It is formed by an electric arc with 400 amperes, inclosed in a furnace of lime, which is the only substance capable of withstanding that temperature. Well, he heated his mixture, and obtained graphite. For two years he kept on experimenting, substituting gold, silver, nickel, manganese, chrome, and everything else, and he invariably obtained graphite. It began to dawn upon him that something else was necessary and that something was pressure. About that time they discovered a meteorite which contained microscopic diamonds, identical with the microscopic ones found in large numbers in all the diamondiferous clay. This put him on the track, for iron possesses the property of contracting in passing from the liquid to the solid shape. In producing this change suddenly, the pressure produced by the solidifying outer envelope on the still liquid inner mass is something enormous, and any carbon inclosed in it will be subjected at the same time to a high degree of pressure and heat. And that is the way he makes his diamonds, which he now proceeded to do, or rather several assistants did it. The iron containing carbon was placed under the arc in the furnace already described and the current turned on. The lime is such a good non-conductor that he could place his hand on it two inches from the place where the temperature was 3500°C. That is the highest temperature possible to obtain with our present means, as then the carbon of the electrodes begins to volatilize. After melting it for a while, the cover was taken from the furnace, the crucible (burned to a white heat, so intense that the operators had to wear blue spectacles), was lifted from it by forceps, and plunged into a jar of cold water. Plunging iron of 6300°F. into cold water is rather a dangerous experiment and enthusiasm ran high. I can't explain the phenomena which took place. It did not make much noise and no spurting, but for a time a good sized flame was over the water.

After a minute he took it out again and let it cool gradually. He then performed the same experiment with carbon and silver. After cooling they are treated with hydrochloric and nitric acids respectively, the graphite separated from the diamonds by means of sp. grav. and it is finished. We did not see that part of it, it would have taken too long, but he showed us by the stereopticon, first, the diamonds of the meteorite, then his artificial ones. The largest is 3-10 of a millimeter in diameter. At present it will be impossible to make them 'handsomer and larger,' the conditions of heat and pressure being unrealizable, but at least we can make diamonds. — *The Phar. Era*.

Scrotal Eczema.

The following is recommended (*Memphis Med. Mo.*):

℞ Hydrarg. chlor. mit.....	5i
Zinc oxidi.....	gr. xl
Bismuthi subnit.....	5iiss
Lanolin.....	5i
Vaseline.....	3ss

M. Ft. ung.

Sig.—Wash the scrotum in hot borax water, and apply the ointment night and morning.

Spice Plaster.

Parrish.

Powdered capsicum,
Powdered cinnamon,
Powdered cloves, of each, 2 ozs.
Rye meal,
Spirits,
Honey, of each, a sufficiency.

To be made into a cataplasm by trituration on a plate, and spreading upon a close fabric. It should be made up extemporaneously when required.

Urticaria.

Sodium salicylate, in doses of three grains every two hours, is said to be very efficacious in relieving urticaria. Three or four doses usually suffice for a cure of the most obstinate case. — *Med. Record*.

Hardening and Coloring Plaster of Paris Casts.

First dry the casts in an oven heated to about the temperature used in baking bread. After they have cooled so that they can be handled without burning the hands, immerse them in a strong, clear solution of alum, and let remain until the alum commences to crystallize on the surface. Remove and wipe off the alum with a wet rag, and again dry in a warm (not hot) oven. When entirely dry immerse in boiled linseed oil cut with a little turpentine. When this is nearly dry apply bronze powder of the desired hue. — *Nat. Drug*.

CURRENT LITERATURE REVIEWED.

THE MONTREAL MEDICAL JOURNAL

for July. Dr. A. D. Blackader contributes an article on the

Etiology of Tuberculosis.

In regard to the influence of heredity, the author states that it is the very rare exception to meet with hereditary tubercle, meaning thereby the congenital transference of the virus, so that the infant enters the world with the bacilli in its tissues. In the vast majority of cases, heredity in tuberculosis signifies only "an excessive hospitality for the tubercle microbe, or a deficient capacity for dealing with him on the part of a too feeble phagocyte."

It may be said, then, that the view generally held at present in regard to the hereditary character of tuberculosis is that cases of true heredity are extremely rare, but that instances may occur where the mother is suffering from general miliary infection, or from definite tuberculous disease of the genital system.

In reference to acquired infection, there are three paths by which the bacilli may obtain entrance: (1) By inhalation through the respiratory tract. (2) With the food through the alimentary tract. (3) By inoculation. Of these perhaps the most important is the first—by the inhalation of dust containing the bacilli in a dried state. These bacilli appear to have great powers of resistance, and are able to retain their infective powers for a long period of time. While in a moist state they do not appear to escape from the sputum, but when the sputum becomes dry it is readily converted into dust, and the bacilli are then liable to be diffused through the air. Great care should therefore be taken over the expectoration of tuberculous patients, that it be thoroughly disinfected as soon as raised and afterwards destroyed, else the apartments occupied by such patients become infective in time through such dust clinging to carpets, bedroom hangings, etc. Not only may the living apartments become infective, but business offices and railway carriages, and even the dust of the road-side become a source of contagion.

The predilection of the apices to the occurrence of symptoms indicative of the presence of the bacilli is well recognized. This predilection has been explained on several theories; among others, it has been referred to an imperfect expansion of the apex or to defective circulation. Recently, it has been pointed out that the thorax at the apex lacks contracting muscular tissue, and with forced expiration there is a recurrent passage of air into the upper lobes, interfering with the expulsion of any foreign substances that may have entered the bronchial tubes. When they have once entered this part of the lung, they experience an amount of rest, which enables them to penetrate to the sub-epithelial tissues and enter the lymph canals.

This penetration generally takes place in the alveoli, where the epithelium is non-ciliated, rather than in the ciliated passages of the smaller bronchi.

While, in adults, inhalation of the bacilli and infection through the respiratory tract is much the most frequent origin of tuberculosis, in children the alimentary tract affords an important path through which the bacilli effect an entrance into the system. The upper part of the tract, owing to the very frequent disorders of the throat, mouth and teeth, occasionally becomes the place of primary infection from which the bacilli pass to the cervical and sub-maxillary glands, and thence may occasion general infection.

Dr. G. E. Armstrong reports

Five cases of Abdominal Section after Confinement.

In the first case, fever came on after the patient got up on the tenth day. The symptoms increased in severity till an operation was demanded for relief. At the section the uterus was curetted, swabbed out with a solution of permanganate of potassium and packed with iodoform gauze. The omentum was found adherent to the uterus and left tube and, on separating the adhesions, a pus sac was discovered, which was emptied, the ovary and tube tied off and part of the omentum removed. The patient made a good recovery.

The second case had been attended by a midwife and, at the section, one tube was found enlarged to the size of an adult's wrist and contained small pockets of pus. The ovary was of natural size and gangrenous.

In the third case, the trouble seemed to follow the administration of an enema.

"At 10 o'clock in the evening of the ninth day, the nurse decided that her patient's bowels needed moving. As the baby had a little looseness the nurse thought that an enema was the proper thing to give. The patient objected strongly to this, on the ground that after her first confinement she had an enema and that she suffered very great pain for 48 hours afterwards. Her objection, however, was overcome and the enema was given. She was almost immediately seized with intense abdominal pain, with great general tenderness, and vomiting. She had a small stool almost immediately and her bowels did not move afterwards. The vomiting persisted and soon became bilious. Hypodermics of opium were given to relieve the pain. The abdomen became tympanitic, the temperature rose, the pulse became rapid and shabby, the face became drawn and anxious, and it was evident that the patient was suffering from some severe lesion, sufficient to cause a condition of collapse. The history and symptoms pointed to some acute obstruction of the bowels, possibly a volvulus. Her condition was an extremely grave one, and it was easily seen that if anything was to be done more than had already been done, it was of a surgical nature. An exploratory incision was advised.

The peritoneal covering of the intestines was congested and two pints of thin, pale yellow odorless pus flowed out. After thorough irrigation, the uterine appendages and appendix vermiformis were examined without finding any condition that was thought to bear a causative relation to the peritonitis. The tube and ovaries were tied off. This woman was moribund when the operation was begun and died ten minutes after being removed from the table, or just 24 hours from the giving of the enema and onset of symptoms."

In the fourth case the patient was seized with severe pain, rigor and high temperature two months after confinement. At the section, a large tubo-ovarian abscess on each side was found. The patient recovered. The author would teach the lesson, from these cases, of strict attention to antiseptic details in confinement and the immediate repair of all lesions occurring in child-bearing.

This number of the magazine concludes with the report of the committee on tuberculosis appointed by the Medico-Chirurgical Society. The following

Rules for the Prevention of Tuberculosis are advised.

1. For the safety of those around him the patient should only expectorate into cuspidors, and when not bedridden he should carry a pocket spit-cup for use whenever in the house and places of public resort where there is no cuspidor available. A simple bedroom cuspidor can be made out of a cup kept for this purpose alone, and half filled with water.

2. To make sure that their contents do not become dried up, and so carried off as dust the cuspidors should contain water. Their contents should be poured daily in the sewer or cesspool (where the bacilli are soon destroyed).

3. Where the patient is up and about, and cannot employ cuspidors, handkerchiefs must be used, which are changed frequently, and placed in boiling water so soon as they are done with.

4. The soiled handkerchiefs and bed linen of such patients must be kept apart from those of healthy persons, and must be well boiled in the process of washing.

5. Unless the position of the patient render this an impossibility (and in this case, for the safety of the family, he should enter a hospital) the patient must sleep alone—preferably in a room by himself.

6. Whether the patient is up and about, or whether he is confined to bed, the following points should be attended to with regard to the bedroom.

- (a.) It should be sunny, well ventilated and free from dark corners.

- (b.) All articles which collect dust should be removed—any carpet present should be replaced by floorcloth. The curtains, if any, should be of light washing material and should be washed frequently in boiling water.

- (c.) The walls should be whitewashed, or covered by material that can be rubbed by damp bread or damp cloths.

- (d.) The floor, and the room in general should never be dry dusted, but should be cleaned by damp cloths, so as to prevent the dust flying about.

- (e.) After the death of a patient suffering from phthisis, the room and bedding should be most thoroughly disinfected. The walls should be given a new coating of whitewash, or may be repapered only after all previous coats of paper have been well dampened and then scraped off. The bedding and clothing of the deceased should be disinfected in the dry steam disinfectant; where possible, they should be destroyed.

THE MEDICAL CHRONICLE, OF MANCHESTER, ENGLAND,

for July. The principal article in this month's issue is by T. Arthur Helme, M. D., F.R. S. E., on

The Relative Position of the Aseptic and Antiseptic Method in Midwifery.

The author takes the position that reliance on the antiseptic method lulls the practitioner into a false sense of security and the danger is that the principles of cleanliness are lost sight of. It is common, he says, to find that the nurse has given the douche without the least attention to the condition of the nozzle of the syringe, which is often very dirty. Or, the vulva is protected by a napkin which, after lying in a bucket soaked with putrescent fluids for hours, is gently rinsed off in warm water, dried before the fire and applied. Or, the practitioner uses the douche for the purpose of destroying the germs for which his hands alone are responsible. The author next takes up the bacteriological investigations in regard to the presence of pus-forming germs in the healthy vagina and, after quoting at length the opinions of various observers, unhesitatingly decides that the normal vagina contains nothing which can be detrimental to the patient.

The details of aseptic midwifery are carefully gone into and rules formulated. In regard to the treatment of the patient after delivery, the author says, "The vaginal douche is just as useless and just as harmful, or more so, in a normal case, post-partum as ante-partum; therefore, shun it: and the less said about the intra-uterine douche the better. Indeed, a great deal too much attention is paid to the cleansing of the patient, and a great deal too little to the cleansing of the practitioner and nurse. If only half the nurse's energy were let loose upon her own and the doctor's hands, instead of being devoted exclusively to the squirting of the woman's internal parts, more benefit would result."

He regards the use of the perineal pad as of the greatest importance. It should be made of wool, absorbent, that all discharges may be taken up; sufficiently large, that the outer layers are never saturated. The pad should be composed of antiseptic material. It should be retained by a perineal bandage and changed at least every three to six hours.

The author sums up his paper as follows:

1. The vagina of the healthy normal pregnant, parturient, and puerperal woman must be regarded as *aseptic*. Our object is to prevent inoculation during and after labor: to attain this object, we look to—

(a) Thorough cleansing of the hands and arms and instruments, with attention to the clothes and infrequency of examination.

(b) Healthy surroundings, pure air, clean sheets, thorough cleansing of the external genitals before and after labor. No internal douching: The use of the perineal pad.

2. The vagina of a woman suffering from chronic discharge is *a priori* to be regarded as septic; our object is to destroy the germs already present, and to prevent fresh inoculation. In addition to the above treatment, therefore, we must here make use of internal antiseptic douching, before, during, and after labor, aiming at sterilization of the vagina.

And among this second group of cases the author would include those to which we are called in emergency, or after they have been for hours, or, may be, for days, in the hands of a midwife, and those where labor has lingered for hours with continuous body discharge or under other doubtful conditions.

With our precautions there will, however, always remain a third series of cases where danger comes from a part not to be reached even by the douche—the tubes—cases difficult of treatment, and still more difficult of diagnosis. But the question of vaginal antiseptics or asepsis does not materially affect these. Puerperal fever will occur, and its cause will probably be discovered post mortem.

The author wishes especially to condemn the unnecessary douching of the normal healthy woman; the faulty manner of douching when the unhealthy conditions necessitate its employment; use of imperfectly cleansed napkins. He would also urge that too much attention is paid to the disinfection of the patient and too little to the disinfection of the doctor and nurse.

Dr. A. Graham Steel contributes a report of "A Case of Aortic Disease with Pulsus Bisferiens," illustrating the report with sphygmographic tracings of the pulse. The remaining paper is a continued report on "Further Cases of Ovarian Cystic Tumors" by Dr. D. Lloyd Roberts.

PERISCOPE.

THERAPEUTICS.

The Use of Cocaine.

1. Amount of cocaine used must be in proportion to extent of surface it is desired to anesthetize. In no case should the quantity exceed one grain and three-quarters.

2. Cocaine should never be used in cases of heart disease, pulmonary disease, or in persons of highly nervous temperament.

3. In injecting cocaine, the intradermic method is preferable to hypodermic. By injecting into, not under mucous membrane or skin, the risk of entering a blood vessel is avoided.

4. During injection the patient should always be in recumbent position; in operations upon the nose and throat, the head should not be raised until anesthesia is complete.

5. It is of great importance that cocaine should be pure, since its combinations with certain other alkalies result in poisonous compounds.—*Brooklyn Medical Journal*.

NEWS AND MISCELLANY.

Half Rate Excursions to the World's Fair via Washington and the B. & O. R. R.

The Baltimore and Ohio R. R. will run a series of special excursions from New York to the World's Fair at rate of \$17.00 for the round trip. The trains will consist of first-

class day coaches equipped with laboratories and toilet conveniences. The trains will start from Jersey Central Station, foot of Liberty Street, New York, at 8.30 A. M., Aug. 5th, 9th and 15th, and reach Chicago at 4.30 P. M. the following day. Tickets will be valid for outward journey only on the special trains, but will be good returning from Chicago in day coaches on any regular train within 10 days, including day of sale. Stops will be made for meals at the dining stations on the line. A Tourist Agent and a train porter will accompany each train to look after the comfort of passengers. Tickets will also be sold for these trains at the Jersey Central offices in Newark, Elizabeth, Plainfield, Bound Brook and Somerville. New York offices 172, 415 and 1140 Broadway, and Station foot of Liberty Street.

Picturesque Route to the Fair.

No other line offers the variety of scenic interest between New York and Chicago that is enjoyed by World's Fair tourists via the Baltimore and Ohio Railroad. Passing through Philadelphia, Baltimore, Washington, the capital of the nation, and by way of Harper's Ferry and the historic Potomac Valley to the Allegheny mountains, which are crossed at an elevation of 3,000 feet above the sea, the traveler sees the arena of the activity of the nation as well as the principal historical features and scenic wonders of the East. Low rates.